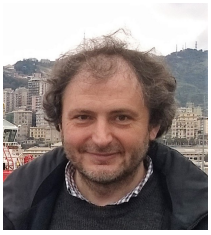
Curriculum vitae

PERSONAL INFORMATION

Federico Giove



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Scopus ID https://www.scopus.com/authid/detail.uri?authorId=6603200123

Loop profile http://loop.frontiersin.org/people/44486

Google scholar https://scholar.google.com/citations?user=P5Kz7kIAAAAJ&hl

Gender M | Nationality Italian

CURRENT POSITION AND APPOINTMENTS

9/2015–present

Senior researcher, tenured

Centro Ricerche Enrico Fermi (formally Museo storico della fisica e Centro studi e ricerche “Enrico Fermi), Rome. As senior researcher (Primo Ricercatore) I head a group of medical physicists (4 postdocs, undergraduate and PhD students) devoted to the study of human brain structure and function, and to the development of the relevant MR methods. I am the PI of the project “Neuroscience and Quantitative Neuroimaging” (NQN). My research activity is strongly oriented towards interdisciplinary approaches to neuroscience and neuroimaging.

I’m involved in many national and international collaborations; I attracted as coordinator about 2 million euros from 2015. I have thus gained a strong experience in coordination of complex projects.

I come from the MRI School led by prof. Bruno Maraviglia, and I continue the tradition of human scale MRI development.

7/2020–present

Coordinator of preclinical research with MRI.

Fondazione Santa Lucia, Rome. I coordinate the research activities with MRI at 3 T on humans. In particular, I supervise protocols optimization, quality assessment, data management.

PAST POSITIONS

9/2012–8/2015

Senior postdoc fellowship

Assegno di ricerca senior at Centro Ricerche Enrico Fermi on “Investigation on Brain Energetics”.

36 months.

1/2011–6/2012

Senior grant

Senior postdoc fellowship at Centro Ricerche Enrico Fermi, on a project devoted to: “Investigation of human brain function by NMR”.

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18 months.

1/2010–12/2010 **Postdoc fellowship**

Assegno di ricerca at Department of Physics, Sapienza Università di Roma, on a project devoted to: “Modeling of brain energetics”.

12 months.

11/2004–10/2009 **Postdoc fellowship**

Junior grant at Centro Ricerche Enrico Fermi, on a project devoted to: “Investigation of Brain Function by MRI”.

60 months.

RESEARCH EXPERIENCE

Interests

- Human brain metabolic dynamics, in healthy subjects and in some pathologies. My specific studies are focused on neurotransmitters and on energy-related compounds.
- Biophysical modeling and computational approaches to the study of brain function and metabolism.
- Quantitative MR approaches to brain structure and function.
- Human brain function at rest and under sustained stimulation (resting state and steady state networks).
- Brain function and electrophysiology.
- MR scanners technology.

Scientific production

- Coauthor of more than 65 full papers and 13 conference papers on international journal with impact factor, about 45 other items, including editorials, commentaries, papers on national journals and other conference papers.
- Some tenths of conference talks and chairmanships.
- h-index: 22, 1700 total citations, 1566 citations without self-citations (source: Scopus).
- h-index: 22, 1614 total citations, 1481 citations without self-citations (source: ISI – Web of Science).
- h-index: 26, 2290 total citations (source: Google Scholar).

2013 Visiting scientist, Center for Magnetic Resonance Research, Minneapolis, MN, USA.

2010–present Research on computational models of brain energetics.

2008–present Research on function and resting state networks of the human brain.

2006–present Research on human vision and perception.

2005–present Research on brain energetics, functions and structure with fMRI, fMRS and structural approaches (including DTI). Research on spinal cord fMRI. Development of methods for acquisition and processing of MRI and MRS data. Development of integration approaches (both instrumental and postprocessing) between MR and compatible techniques.

2001–2004 Research on brain energetics and function by fMRI and fMRS, as PhD student.

2000–2001 Research on brain energetics by fMRS, as undergraduate student.

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ACADEMIC QUALIFICATIONS

2017–present Qualified as full professor of Applied Physics (02/D1, Fisica applicata, didattica e storia della fisica, from 5/12/2017 to 5/12/2026), National Scientific Qualification (Abilitazione Scientifica Nazionale), Italy.

2013–present Qualified as associate professor of Applied Physics (02/B3, Fisica applicata, now Fisica applicata, didattica e storia della fisica, 02/D1, from 27/12/13 to 27/12/22), Experimental Physics of the Matter (02/B1, Fisica sperimentale della materia, from 13/10/14 to 13/10/23), Physiology (05/D1, Fisiologia, from 31/1/14 to 31/1/23), General Biochemistry (05/E1, Biochimica Generale, from 5/12/2017 to 5/12/2026), Science of healthcare professions and applied medical technologies (06/N1, dal 29/4/2019 al 29/4/2028). National Scientific Qualification (Abilitazione Scientifica Nazionale), Italy.

ACADEMIC APPOINTMENTS AND CORRELATED EXPERIENCES

2020 Member of the Scientific Committee of the Virtual online GIDRM Workshop on Artificial Intelligence in NMR, MRI and Neuroscience.

2019 Member of the group “Health” of the Commission established by the Ministry of Research for the 2021-2027 National Research Plan (PNR).

2017–present Member of the Board (Collegio dei Docenti) of the PhD School in Morphogenesys and Tissue Engineering, from XXXIII cycle, Sapienza Università di Roma.

2013–2021 Repeatedly member of Commission or President of Commission for public selections for postdoc, researcher and administrative positions (Centro Ricerche Enrico Fermi).

2009–present Condirector of the International School on Magnetic Resonance and Brain Function, Erice, Italy.

2007–2008 President of the Local Organizing Committee of International Society for Magnetic Resonance in Medicine Workshop on Advances in High Field MR, Rome, 15–18 October.

2003–2009 Member of the Organizing Committee of the International School on Magnetic Resonance and Brain Function, Erice, Italy.

TEACHING

Teaching as Titular Professor or Lecturer

2018–2020 Adjunct Professor (Professore a contratto), Instrumentation Physics: Applied Physics program (SSD FIS/07), degree course “E” in Tecniche di radiologia medica, per immagini e radioterapia (L/SNT3), Dipartimento di Scienze anatomiche, istologiche, medico legali e dell’apparato locomotore, Sapienza Università di Roma.

2 CFU, 2 academic years

2018–2020 Adjunct Professor (Professore a contratto), Radiation Therapy: Applied Physics program (SSD FIS/07), degree course “E” in Tecniche di radiologia medica, per immagini e radioterapia (L/SNT3), Dipartimento di Scienze anatomiche, istologiche, medico legali e dell’apparato locomotore, Sapienza Università di Roma.

1 CFU, 2 academic years

2018 Lecturer, First Level Master on MR techniques in clinic and research, Università Campus Bio-Medico, Rome.

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2017 Lecturer, Second Level Master on Radioprotection – Safety of ionizing and non-ionizing radiations, Università degli Studi "Tor Vergata", Rome.

2016–2017 Adjunct Professor (Professore a contratto), Basic Physics and Chemistry: Electric and Electronic Measures program (SSD ING-INF/07), degree course "E" in Tecniche di radiologia medica, per immagini e radioterapia (L/SNT3), Dipartimento di Scienze anatomiche, istologiche, medico legali e dell'apparato locomotore, Sapienza Università di Roma.

1 CFU, 1 academic year

2015–2017 Adjunct Professor (Professore a contratto) Basic Physics and Chemistry: Applied Physics program (SSD FIS/07), degree course "E" in Tecniche di radiologia medica, per immagini e radioterapia (L/SNT3), Dipartimento di Scienze anatomiche, istologiche, medico legali e dell'apparato locomotore, Sapienza Università di Roma.

2 CFU, 2 academic years

2015 Lecturer, Second Level Master on Radioprotection – Safety of ionizing and non-ionizing radiations, Università Campus Bio-Medico, Rome.

2014–2015 Lecturer (Docente in convenzione), Physics Applied to Instrumentation and Radiotherapy: Radioprotection Physics program (SSD FIS/07), degree course "E" in Tecniche di radiologia medica, per immagini e radioterapia (L/SNT3), Dipartimento di Scienze anatomiche, istologiche, medico legali e dell'apparato locomotore, Sapienza Università di Roma

3 CFU, 1 academic year

Teaching as Assistant Professor

2016–2017 Teaching at the Instrumentation Physics: Applied Physics program (SSD FIS/07), degree course "E" in Tecniche di radiologia medica, per immagini e radioterapia (L/SNT3), Dipartimento di Scienze anatomiche, istologiche, medico legali e dell'apparato locomotore, Sapienza Università di Roma, with Prof. Rosanna Pellegrini.

2 CFU, 1 academic year

2015–2016 Teaching at the Physics Applied to Instrumentation and Radiotherapy: Radioprotection Physics program (SSD FIS/07), degree course "E" in Tecniche di radiologia medica, per immagini e radioterapia (L/SNT3), Dipartimento di Scienze anatomiche, istologiche, medico legali e dell'apparato locomotore, Sapienza Università di Roma, with Prof. Rosanna Pellegrini.

3 CFU, 1 academic year

2014–2015 Teaching at the Basic Physics and Chemistry: Applied Physics program (SSD FIS/07), degree course "E" in Tecniche di radiologia medica, per immagini e radioterapia (L/SNT3), Dipartimento di Scienze anatomiche, istologiche, medico legali e dell'apparato locomotore, Sapienza Università di Roma, with Prof. Rosanna Pellegrini.

2 CFU, 1 academic year

2014–2017 Teaching at the Basic Physics and Chemistry: Applied Physics program (SSD FIS/07), degree course "U" in Infermieristica (L/SNT1), Dipartimento di Sanità pubblica e malattie infettive, Sapienza Università di Roma, with Prof. Rosanna Pellegrini.

1 CFU, 3 academic years

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2008–2014 Teaching at the Medical Physics program (SSD FIS/07), degree course in Physics (LM-17), Department of Physics, Sapienza Università di Roma, with Prof. Bruno Maraviglia and Prof. Giovanni E. Gigante.

6 CFU, 6 academic years

2007 Teaching at the Complements of Biosystem Physics program (SSD FIS/07), degree course in Physics (LM-17), Department of Physics, Sapienza Università di Roma, with Prof. Bruno Maraviglia

3 CFU, 1 academic year

Other didactic activity

2006–present Supervisor of 7 bachelor's degrees in Physics, 11 Master degrees in Physics, 5 Degrees at the Postgraduate school in Medical Physics, 1 PhD thesis in Biophysics and 2 PhD theses in Morphogenesis and tissue engineering, all at Sapienza Università di Roma. I also supervised 1 PhD thesis in Physics at the Università Roma 3, and 5 bachelor's degrees in Physics at Université Paris-Sud 11. I acted as advisor and member of examining committee for a PhD thesis in Mathematics and Statistics at the University of Basque Country.

2018–2020 Seminars and laboratories on NMR the the program of Medical Physics (SSD FIS/07), degree course in Physics (LM-17), Department of Physics, Sapienza Università di Roma (Prof. Naurang Saini)

EDITORIAL WORK

Associate/Academic Editor

2021–present PlOS One.

2019–present Frontiers in Neuroscience, Brain Imaging Methods section.

2018–present Frontiers in Cellular Neuroscience, Cellular Neurophysiology section.

2015–present Frontiers in Physics and Frontiers in Physiology, Medical Physics and Imaging section.

Editorial Board member

2015–present Frontiers in Computational Neuroscience.

Reviewer

2006–present For many international journals (Scientific Reports, Cerebral Cortex, Neuroimage, Journal of Cerebral Blood Flow and Metabolism, NMR in Biomedicine, Magnetic Resonance in Medicine, PLOS One, Journal of Neuroscience Methods, Magnetic Resonance Imaging, Journal of Physiology, Journal of Mathematical Biology, Brain Structure and Function, Frontiers in Neuroscience).

Guest editor

2016–2018 Coeditor of the Proceedings of the International School on Magnetic Resonance and Brain Function, Erice, Italy, Frontiers in Physics, Frontiers in Neurology, Frontiers in Neuroscience (2 special issues).

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2003–2011 Coeditor of the Proceedings of the International School on Magnetic Resonance and Brain Function, Erice, Italy, Magnetic Resonance Imaging (8 special issues).

Activity as grants reviewer

2018 Grant reviewer for The Netherlands Organisation for Scientific Research.

2018 Grant reviewer for the University of Modena and Reggio Emilia.

2018 Grant reviewer for the Alzheimer's Society Foundation, UK.

2017–present Member of the REPRISE register (Official register of Expert Peer Reviewers for Italian Scientific Evaluation) in the basic research section, Italian Ministry of Research, ERC sectors LS4_5, LS5_10, LS7_1, PE8_13, SSD FIS/07, BIO/09, ING-IND/34.

MEMBERSHIPS

2009–2014 INFN, Istituto Nazionale di Fisica Nucleare, Rome 1 Unit.

2008–present International Society for Magnetic Resonance in Medicine, Berkeley, CA, USA.

2002–present Centro Ricerche Enrico Fermi, Rome.

2000–2011 Department of Physics, Sapienza Università di Roma.

2000–2003 INFM, Istituto Nazionale di Fisica della Materia.

THIRD MISSION

2020–current Member of the Organizing Committe of StartCup Lazio 2021, regional business plan competition between startups.

2019–2020 Collaborator at the setting up of the Museum on Enrico Fermi in the building of the former Royal Institute of Physics in Via Panisperna, now headquarters of Centro Ricerche Enrico Fermi.

2019–current Speaker at seminars and guide for high school students in visit at the museum.

MAIN COLLABORATIONS

2020–in corso Department of Physics, Sapienza Università di Roma (Stefano Giagu). Development of AI methods in MRI.

2019–in corso Magnetic Resonance Research Center, Yale University, New Haven (Douglas Rothman). Metabolic modelling.

2019–present University of Eastern Finland, Kuopio (Jussi Tohka). Development of AI methods in MRI.

2019–in corso Department of Neuroscience, Imaging and Clinical Sciences, Università di Chieti–Pescara, Chieti (Richard G. Wise). Development of calibrated BOLD imaging.

2018–2019 University of Montreal. (Julien Cohen-Adad). Spinal cord imaging.

2018–present Project Consulting S.R.L., Rome. Development of algorithms and platforms for automated processing of biomedical images.

2016–present Istituto dei Sistemi Complessi, Consiglio Nazionale delle Ricerche (CNR–ISC), Rome (Silvia Capuani). Developement of quantitative clinical MR methods.

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2015–present Department of Information Engineering, Electronics and Telecommunications, Sapienza Università di Roma (Fabrizio Frezza). Developement of biophysical models.

2015–present Siemens Healthcare Italy, Milano. Development of methods for MR spectroscopy in vivo.

2015–2019 University of Eastern Finland, Kuopio (Olli Gröhn). Development of structural MRI for characterization of microstructural damage in neurodegeneration.

2013–present Cardiff Brain Research University Center (CUBRIC), University of Cardiff (Richard G. Wise). Development of methods for the study of brain functional networks.

2013–present Istituto per i processi chimico-fisici, now Istituto di nanotecnologia, Consiglio Nazionale delle Ricerche (CNR–IPCF), Rome (Andrea De Martino, Alessia Cedola, Michela Fratini). Metabolic networks, spinal cord imaging.

2013–2014 Dipartimento di Scienze Radiologiche, Sapienza Università di Roma (Valeria Panebianco). Advanced MR methods for prostate cancer characterization.

2008–2012 EBNeuro S.p.A., Firenze. Development of an hardware EEG filter for simultaneous EEG/fMRI recordings.

2008–present Università di Modena e Reggio Emilia, Modena (Carlo A. Porro, Paul E. Summers). Spinal cord fMRI.

2006–present Center For Magnetic Resonance Research (CMRR), University of Minnesota, Minneapolis (Silvia Mangia, Ivan Tkáč, Kâmil Uğurbil). Study of brain metabolic dynamics, neurometabolic coupling, metabolic pathologies, metabolic modeling.

2003–in corso Fondazione Santa Lucia, Rome (Gisela E. Hagberg, Emiliano Macaluso, Gianfranco Spalletta, Marco Bozzali). Brain metabolism and neurodegenerative diseases. Technological partnership for the development of 2 3 T MR scanners.

2003–2016 Dipartimento di Scienze Neurologiche, Sapienza Università di Roma (Claudio Colonnese, Carlo Di Bonaventura). Neurological diseases.

GRANTS, FUNDING AND RESEARCH PROJECTS

2021–2023 Regione Lazio POR-FESR 2014–2020 A0375-2020-36648, “FISASMEM — Physiology of aging: development of quantitative MRI methods”. Coordinator and Principal Investigator.

149614 €.

2020–2022 Regione Lazio POR-FESR 2014–2020 A0320-2019-28189, “NBP — Development of a collaborative platform for advanced neuroimaging methods”. Coordinator and Principal Investigator.

379832 €.

2020–2022 Regione Lazio DTC Fase 1 20591, “VEROSH — Virtual ExploRation Of Science History”. Investigator.

73840 €.

2019–2021 Regione Lazio POR-FESR 2014–2020 A0301-2019-26658 Strenghtening of research infrastructures, “ISIS@MACH — Composite Materials ISIS Hub”. Investigator.

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642335 €.

2017 E.M.S. S.R.L., Bologna. Measures of EM compatibility of stimulation devices with MRI.

4500 €.

2015–2019 H2020 MSCA-RISE 691110 "MICROBRADAM — Advanced MR methods for characterization of microstructural brain damage". Consortium coordinator and Principal Investigator.

540000 €.

2015–2018 Regione Lazio POR-FESR 2014-2020 RU-2014-1092, "PAMINA — Piattaforma per l'Analisi Multimodale Integrata in Neuroscienze Applicate – Platform for Integrated and Multimodal Analysis in Applied Neuroscience". Coordinator and Principal Investigator.

862000 €.

2015–2016 Galmed Pharmaceuticals, Tel Aviv. ARREST Phase IIb Trial. Optimization of MR spectroscopy methods for MR centers in Italy. Consultant.

2012–2014 MIUR Progetti Premiali, "NETFUN — Functional brain networks studied by NMR". Principal Investigator.

100500 €.

2012–2014 INFN TOPEM collaboration: "TOf PEt and and SPECT MRI for PROstate cancer diagnosis and follow up". Investigator.

2010–present Fondazione Santa Lucia, Rome. Coordinator of the project "Study of metabolic events during visual perception by MR techniques".

2010 A whole body 7 T MRI system was jointly assigned to prof. Bruno Maraviglia and to me, given by the National Institutes of Health (Bethesda) to Sapienza Università di Roma following an international call. The scanner was not recommissioned because of missing cofunding.

Value in goods: about 2 million €.

2008–2010 PRIN, "Chracterization of human spinal cord function by MRI". Investigator.

Total amount: 41700 €.

2007–2009 Regione Lazio, "FUSION — Framework and Unified System for Investigation on Neurosciences". Scientific coordinator.

800000 €.

2003–2005 PRIN, "Advanced methods for the study of human brain function by MRI". Investigator.

81500 €.

2004–present Centro Ricerche Enrico Fermi, "NQN — Neurioscience and Quantitative Neuroimaging", previously "Non-invasive technologies for the Neurosciences: Magnetic Resonance (TNIN)", then "MRI techniques for the study of human brain function (T-MENS)". Investigator 2004–2010, Principal Investigator 2010–present.

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RECOGNITIONS AND PRIZES

2010 The paper DiNuzzo, Mangia, Maraviglia, Giove. "Glycogenolysis in astrocytes supports blood-borne glucose channeling not glycogen-derived lactate shuttling to neurons", Journal of Cerbral Blood Flow and Metabolism **30**:1895–1904 (2010), doi: 10.1038/jcbfm.2010.151 is selected as "Feature article", with an introduction by Gerald Dienel.

2014 **Outstanding Reviewer**

International journal Journal of Neuroscience Methods.

2001–2004 PhD scolarship, Sapienza Università di Roma.

EDUCATION

2005 **PhD in Biophysics** ISCED 8, EQF 8

Sapienza Università di Roma. Thesis title: "Energetics and activation of the central nervous system by in vivo nuclear magnetic resonance". Supervisor: Prof. Bruno Maraviglia.

2001 **Master Degree in Physics** ISCED 7, EQF 7

(cum laude). Sapienza Università di Roma. Thesis title: "Dynamics of neuronal metabolism under activation: "in vivo" lactate measurement with NMR". Supervisor: Prof. Bruno Maraviglia.

OTHER INFORMATION

Experience with MRI scanners

Progremming languages
- Certified IDEA programmer (Pulse programming language for Siemens scanners).
- Basic knowledge of Bruker and Philips pulse programming languages.

Scanners
- Advanced knowledge of Siemens scanners (software and hardware).
- Very good knowledge of General Electric and Philips scanners (software), basic knowledge of Bruker scanners.

NMR Software
- Advanced knowledge of main MR processing tools. Spectroscopy: LCModel, jMRUI, MatNMR, XWinNMR; Imaging: SPM, AFNI, FSL, freesurfer).
- Author of several customm processing routines in Matlab.

Informatic knowledge

Programming languages C, Fortran, HTML (basic knowledge); Matlab, LaTeX 2$_\varepsilon$ (advanced knowledge).

OS and servers SQL Server (basic knowledge); MS Windows (NT kernel, workstation and server), Linux, Apache (advanced knowledge). Advanced knowledge in the fields of networking and ssytems management (Unix-like, Windows server).

Applications Main productivity applications; Data analysis and statistics (SPSS, Origin).

LANGUAGES

Mother tongue Italian

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Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C2	B1	B2	C1
Spanish	B2	A2	A2	A2	A2

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
Common European Framework of Reference for Languages

DIGITAL SKILLS

Digital competences

SELF-ASSESSMENT				
Information Processing	Communication	Content creation	Safety	Problem solving
Proficient user	Independent user	Independent user	Proficient user	Proficient user

Digital competences - Self-assessment grid

ATTACHMENTS

Complete list of scientific publications.

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Publications Federico Giove

Papers on international journal

[A1] Julien Cohen-Adad et al. Generic acquisition protocol for quantitative MRI of the spinal cord. *Nature protocols* (2021). DOI: 10.1038/s41596-021-00588-0.

[A2] Julien Cohen-Adad et al. Open-access quantitative MRI data of the spinal cord and reproducibility across participants, sites and manufacturers. *Scientific data* 8 (2021), 219. DOI: 10.1038/s41597-021-00941-8.

[A3] Riccardo De Feo, Artem Shatilo, Alejandra Sierra, Juan-Miguel Valverde, Olli Gröhn, Federico Giove, and Jussi Tohka. Automated joint skull-stripping and segmentation with Multi-Task U-Net in large mouse brain MRI databases. *Neuroimage* 229 (2021), 117734. DOI: 10.1016/j.neuroimage.2021.117734.

[A4] Daniele Mascali, Marta Moraschi, Mauro DiNuzzo, Silvia Tommasin, Michela Fratini, Tommaso Gili, Richard G. Wise, Silvia Mangia, Emiliano Macaluso, and Federico Giove. Evaluation of denoising strategies for task-based functional connectivity: Equalizing residual motion artifacts between rest and cognitively demanding tasks. *Human Brain Mapping* 42 (2021), 1805–1828. DOI: 10.1002/hbm.25332.

[A5] Paolo Miocchi et al. Steerable3D: an ImageJ plugin for neurovascular enhancement in 3-D segmentation. *Physica Medica* 81 (2021), 197–209. DOI: 10.1016/j.ejmp.2020.12.010.

[A6] Michela Fratini, Ali Abdollahzadeh, Mauro DiNuzzo, Raimo A. Salo, Laura Maugeri, Alessia Cedola, Federico Giove, Olli Gröhn, Jussi Tohka, and Alejandra Sierra. Multiscale imaging approach for studying the central nervous system: methodology and perspective. *Frontiers in Neuroscience* 14 (2020), 72. DOI: 10.3389/fnins.2020.00072.

[A7] Marta Moraschi, Daniele Mascali, Silvia Tommsain, Tommaso Gili, Ibrahim Eid Hassan, Michela Fratini, Mauro DiNuzzo, Richard G. Wise, Silvia Mangia, Emiliano Macaluso, and Federico Giove. Brain Network Modularity During a Sustained Working-Memory Task. *Frontiers in Physiology* 11 (2020), 422. DOI: 10.3389/fphys.2020.00422.

[A8] Riccardo De Feo and Federico Giove. Towards an efficient segmentation of small rodents brain: a short critical review. *Journal of Neuroscience Methods* 323 (2019), 82–89. DOI: 10.1016/j.jneumeth.2019.05.003.

[A9] Mauro DiNuzzo, Daniele Mascali, Marta Moraschi, Giorgia Bussu, Laura Maugeri, Fabio Mangini, Michela Fratini, and Federico Giove. Brain networks underlying eye's pupil dynamics. *Frontiers in Neuroscience* 13 (2019), 965. DOI: 10.3389/fnins.2019.00965.

[A10] Fabio Mangini, Mauro DiNuzzo, Laura Maugeri, Marta Moraschi, Daniele Mascali, Alessia Cedola, Fabrizio Frezza, Federico Giove, and Michela Fratini. Numerical simulation of the Blood Oxygenation Level-Dependent functional magnetic resonance signal using finite element method. *International Journal for Numerical Methods in Biomedical Engineering* (2019), e3290. DOI: 10.1002/cnm.3290.

[A11] Petr Bednařík, Ivan Tkáč, Federico Giove, Lynn E. Eberly, Dinesh K. Deelchand, Felipe R. Barreto, and Silvia Mangia. Neurochemical responses to chromatic and achromatic stimuli in the human visual cortex. *Journal of cerebral blood flow and metabolism* 38 (2018), 347–359. DOI: 10.1177/0271678X17695291.

[A12] Daniele Mascali, Mauro DiNuzzo, Laura Serra, Silvia Mangia, Bruno Maraviglia, Marco Bozzali, and Federico Giove. Disruption of Semantic Network in Mild Alzheimer's Disease Revealed by Resting-State fMRI. *Neuroscience* 371 (2018), 38–48. DOI: 10.1016/j.neuroscience.2017.11.030.

[A13] Laura Maugeri, Mauro DiNuzzo, Marta Moraschi, Charles Nicaise, Inna Bukreeva, Fabio Mangini, Federico Giove, Alessia Cedola, and Michela Fratini. Fractal dimension analysis of high-resolution X-ray phase contrast micro-tomography images at different threshold levels in a mouse spinal cord. *Condensed Matter* 3 (2018), 48. DOI: 10.3390/condmat3040048.

[A14] Laura Maugeri, Marta Moraschi, Paul E. Summers, Stefania Favilla, Carlo Adolfo Porro, Alessia Cedola, Eleonora Stefanutti, Paolo Miocchi, Federico Giove, and Michela Fratini. Assessing denoising strategies for fMRI in spinal cord and Brainstem. *Journal of Instrumentation* 13 (2018), C02028. DOI: 10.1088/1748-0221/13/02/C02028.

[A15] Andrea Romano, Marta Moraschi, Riccardo Cornia, Alessandro Bozzao, Maria Camilla Rossi-Espagnet, Federico Giove, Giorgio Albertini, and Alberto Pierallini. White matter involvement in young non-demented Down's syndrome subjects: a tract-based spatial statistic analysis. *Neuroradiology* 60 (2018), 1335–1341. DOI: 10.1007/s00234-018-2102-5.

[A16] Eleonora Stefanutti et al. Assessment of the effects of different sample perfusion procedures on phase-contrast tomographic images of mouse spinal cord. *Journal of Instrumentation* 13 (2018), C03027. DOI: 10.1088/1748-0221/13/03/C03027.

[A17] Silvia Tommasin, Daniele Mascali, Marta Moraschi, Tommaso Gili, Ibrahim Eid Hassan, Michela Fratini, Mauro DiNuzzo, Richard G Wise, Silvia Mangia, Emiliano Macaluso, and Federico Giove. Scale-invariant rearrangement of resting state networks in the human brain under sustained stimulation. *NeuroImage* 179 (2018), 570–581. DOI: 10.1016/j.neuroimage.2018.06.006.

[A18] I. Bukreeva, G. Campi, Michela Fratini, R. Spanò, D. Bucci, G. Battaglia, Federico Giove, A. Bravin, A. Uccelli, C. Venturi, M. Mastrogiacomo, and A. Cedola. Quantitative 3D investigation of Neuronal network in mouse spinal cord model. *Scientific reports* 7 (2017), 41054. DOI: 10.1038/srep41054.

[A19] Mauro DiNuzzo, Federico Giove, Bruno Maraviglia, and Silvia Mangia. Computational Flux Balance Analysis Predicts that Stimulation of Energy Metabolism in Astrocytes and their Metabolic Interactions with Neurons Depend on Uptake of K+ Rather than Glutamate. *Neurochemical research* 42 (2017), 202–216. DOI: 10.1007/s11064-016-2048-0.

[A20] Mauro DiNuzzo, Daniele Mascali, Marta Moraschi, Giorgia Bussu, Bruno Maraviglia, Silvia Mangia, and Federico Giove. Temporal Information Entropy of the Blood-Oxygenation Level-Dependent Signals Increases in the Activated Human Primary Visual Cortex. *Frontiers in physics* 5 (2017), 7. DOI: 10.3389/fphy.2017.00007.

[A21] Silvia Mangia et al. Multi-modal Brain MRI in Subjects with PD and iRBD. *Frontiers in neuroscience* 11 (2017), 709. DOI: 10.3389/fnins.2017.00709.

[A22] Silvia Tommasin, Daniele Mascali, Tommaso Gili, Ibrahim Eid Assan, Marta Moraschi, Michela Fratini, Richard G. Wise, Emiliano Macaluso, Silvia Mangia, and Federico Giove. Task-Related Modulations of BOLD Low-Frequency Fluctuations within the Default Mode Network. *Frontiers in Physics* 5 (2017). DOI: 10.3389/fphy.2017.00031.

[A23] Petr Bednařík, Ivan Tkáč, Federico Giove, Mauro DiNuzzo, Dinesh K. Deelchand, Uzay E. Emir, Lynn E. Eberly, and Silvia Mangia. Neurochemical and BOLD responses during neuronal activation measured in the human visual cortex at 7 Tesla. *Journal of Cerebral Blood Flow and Metabolism* 35 (2015), 601–610. DOI: 10.1038/jcbfm.2014.233.

[A24] Mauro DiNuzzo, Federico Giove, Bruno Maraviglia, and Silvia Mangia. Monoaminergic Control of Cellular Glucose Utilization by Glycogenolysis in Neocortex and Hippocampus. *Neurochemical Research* 40 (2015), 2493–2504. DOI: 10.1007/s11064-015-1656-4.

[A25] Mauro DiNuzzo, Silvia Mangia, Bruno Maraviglia, and Federico Giove. Does abnormal glycogen structure contribute to increased susceptibility to seizures in epilepsy? *Metabolic Brain Disease* 30 (2015), 307–316. DOI: 10.1007/s11011-014-9524-5.

[A26] Michela Fratini et al. Simultaneous submicrometric 3D imaging of the micro-vascular network and the neuronal system in a mouse spinal cord. *Scientific Reports* 5 (2015), 8514. DOI: 10.1038/srep08514.

[A27] Daniele Mascali, Mauro DiNuzzo, Tommaso Gili, Marta Moraschi, Michela Fratini, Bruno Maraviglia, Laura Serra, Marco Bozzali, and Federico Giove. Intrinsic Patterns of Coupling between Correlation and Amplitude of Low-Frequency fMRI Fluctuations Are Disrupted in Degenerative Dementia Mainly due to Functional Disconnection. *PLOS ONE* 10 (2015), e0120988. DOI: 10.1371/journal.pone.0120988.

[A28] Mauro DiNuzzo, Silvia Mangia, Bruno Maraviglia, and Federico Giove. Physiological bases of the K+ and the glutamate/GABA hypotheses of epilepsy. *Epilepsy Research* 108 (2014), 995–1012. DOI: 10.1016/j.eplepsyres.2014.04.001.

[A29] Michela Fratini, Marta Moraschi, Bruno Maraviglia, and Federico Giove. On the impact of physiological noise in spinal cord functional MRI. *Journal of Magnetic Resonance Imaging* 40 (2014), 770–777. DOI: 10.1002/jmri.24467.

[A30] Mauro DiNuzzo, Federico Giove, Bruno Maraviglia, and Silvia Mangia. Glucose metabolism down-regulates the uptake of 6-(N-(7-nitrobenz-2-oxa-1,3-diazol-4-yl)amino)-2-deoxyglucose (6-NBDG) mediated by glucose transporter 1 isoform (GLUT1): theory and simulations using the symmetric four-state carrier model. *Journal of Neurochemistry* 125 (2013), 236–246. DOI: 10.1111/jnc.12164.

[A31] Mauro DiNuzzo, Silvia Mangia, Bruno Maraviglia, and Federico Giove. Regulatory mechanisms for glycogenolysis and K(+) uptake in brain astrocytes. *Neurochemistry International* 63 (2013), 458–464. DOI: 10.1016/j.neuint.2013.08.004.

[A32] Franco Garibaldi et al. TOPEM: A PET TOF endorectal probe, compatible with MRI for diagnosis and follow up of prostate cancer. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment* 702 (2013), 13–15. DOI: 10.1016/j.nima.2012.09.020.

[A33] Silvia Mangia, Federico Giove, and Mauro DiNuzzo. K^+ homeostasis in the brain: a new role for glycogenolysis. *Neurochemical Research* 38 (2013), 470–471. DOI: 10.1007/s11064-012-0962-3.

[A34] Francesco A. Massucci, Mauro DiNuzzo, Federico Giove, Bruno Maraviglia, Isaac Perez Castillo, Enzo Marinari, and Andrea De Martino. Energy metabolism and glutamate-glutamine cycle in the brain: a stoichiometric modeling perspective. *BMC Systems Biology* 7 (2013), 103. DOI: 10.1186/1752-0509-7-103.

[A35] Valeria Panebianco, Federico Giove, Flavio Barchetti, Franca Podo, and Roberto Passariello. High field PET/MRI and MRS: potential clinical and research applications. *Clinical and Translational Imaging* 1 (2013), 17–29. DOI: 10.1007/s40336-013-0004-4.

[A36] Paul E. Summers, Carlo A. Porro, and Federico Giove. Somatotopy of nociceptive responses in the human spinal cord. *Pain* 154 (2013), 2572–2573. DOI: 10.1016/j.pain.2013.07.056.

[A37] Mauro DiNuzzo and Federico Giove. Activity–dependent energy budget for neocortical signaling: effect of short-term synaptic plasticity on the energy expended by spiking and synaptic activity. *Journal of Neuroscience Research* 90 (2012), 2094–2102. DOI: 10.1002/jnr.23098.

[A38] Mauro DiNuzzo, Silvia Mangia, Bruno Maraviglia, and Federico Giove. The role of astrocytic glycogen in supporting the energetics of neuronal activity. *Neurochemical research* 37 (11 2012), 2432–2438. DOI: 10.1007/s11064-012-0802-5.

[A39] Silvia Mangia, Federico Giove, and Mauro DiNuzzo. Metabolic pathways and activity-dependent modulation of glutamate concentration in the human brain. *Neurochemical research* 37 (11 2012), 2554–2561. DOI: 10.1007/s11064-012-0848-4.

[A40] Marta Moraschi, Mauro DiNuzzo, and Federico Giove. On the origin of sustained negative BOLD response. *Journal of neurophysiology* 108 (9 2012), 2339–2342. DOI: 10.1152/jn.01199.2011.

[A41] Mauro DiNuzzo, Tommaso Gili, Bruno Maraviglia, and Federico Giove. Modeling the contribution of neuron–astrocyte cross talk to slow blood oxygenation level-dependent signal oscillations. *Journal of Neurophysiology* 106 (2011), 3010–3018. DOI: 10.1152/jn.00416.2011.

[A42] Mauro DiNuzzo, Bruno Maraviglia, and Federico Giove. Why does the brain (not) have glycogen? *Bioessays* 33 (2011), 319–326. DOI: 10.1002/bies.201000151.

[A43] Tommaso Gili, Mara Cercignani, Laura Serra, Roberta Perri, Federico Giove, Bruno Maraviglia, Carlo Caltagirone, and Marco Bozzali. Regional brain atrophy and functional disconnection across Alzheimer's disease evolution. *Journal of Neurology, Neurosurgery and Psychiatry* 82 (2011), 58–66. DOI: 10.1136/jnnp.2009.199935.

[A44] Giovanni Giulietti, Paul E. Summers, Diana Ferraro, Carlo A. Porro, Bruno Maraviglia, and Federico Giove. Semiautomated segmentation of the human spine based on echoplanar images. *Magnetic Resonance Imaging* 29 (2011), 1429–1436. DOI: 10.1016/j.mri.2011.08.006.

[A45] Silvia Mangia, Mauro DiNuzzo, Federico Giove, Anthony Carruthers, Ian A. Simpson, and Susan J. Vannucci. Response to 'Comment on recent modeling studies of astrocyte-neuron metabolic interactions': much ado about nothing. *Journal of Cerebral Blood Flow and Metabolism* 31 (2011), 1346–1353. DOI: 10.1038/jcbfm.2011.29.

[A46] Claudia Cacciari, Marta Moraschi, Margherita Di Paola, Andrea Cherubini, Maria Donata Orfei, Federico Giove, Bruno Maraviglia, Carlo Caltagirone, and Gianfranco Spalletta. White matter microstructure and apathy level in amnestic mild cognitive impairment. *Journal of Alzheimer's Disease* 20 (2010), 501–507. DOI: 10.3233/JAD-2010-1384.

[A47] Mauro DiNuzzo, Silvia Mangia, Bruno Maraviglia, and Federico Giove. Changes in glucose uptake rather than lactate shuttle take center stage in subserving neuroenergetics: evidence from mathematical modeling. *Journal of Cerebral Blood Flow and Metabolism* 30 (2010), 586–602. DOI: 10.1038/jcbfm.2009.232.

[A48] Mauro DiNuzzo, Silvia Mangia, Bruno Maraviglia, and Federico Giove. Glycogenolysis in astrocytes supports blood-borne glucose channeling not glycogenderived lactate shuttling to neurons: evidence from mathematical modeling. *Journal of Cerebral Blood Flow and Metabolism* 30 (2010), 1895–1904. DOI: 10.1038/jcbfm.2010.151.

[A49] Marta Moraschi, Giovanni Giulietti, Federico Giove, Manuela Guardati, Girolamo Garreffa, Nicola Modugno, Claudio Colonnese, and Bruno Maraviglia. fMRI study of motor cortex activity modulation in early Parkinson's disease. *Magnetic Resonance Imaging* 28 (2010), 1152–1158. DOI: 10.1016/j.mri.2010.03.025.

[A50] Marta Moraschi, Gisela E. Hagberg, Margherita Di Paola, Gianfranco Spalletta, Bruno Maraviglia, and Federico Giove. Smoothing that does not blur: effects of the anisotropic approach for evaluating diffusion tensor imaging data in the clinic. *Journal of Magnetic Resonance Imaging* 31 (2010), 690–697. DOI: 10.1002/jmri.22040.

[A51] Stefano Peca, Marco Carnì, Carlo Di Bonaventura, Teresa Aprile, Gisela E. Hagberg, Anna Teresa Giallonardo, Mario Manfredi, Silvia Mangia, Girolamo Garreffa, Bruno Maraviglia, and Federico Giove. Metabolic correlatives of brain activity in a FOS epilepsy patient. *NMR in Biomedicine* 23 (2010), 170–178. DOI: 10.1002/nbm.1439.

[A52] Mauro DiNuzzo, Federico Giove, and Bruno Maraviglia. A biochemical framework for modeling the functional metabolism of the human brain. *Biophysics & BioEngineering Letters* 2(2) (2009).

[A53] Federico Giove, Tommaso Gili, Vittorio Iacovella, Emiliano Macaluso, and Bruno Maraviglia. Images-based suppression of unwanted global signals in resting-state functional connectivity studies. *Magnetic Resonance Imaging* 27 (2009), 1058–1064. DOI: 10.1016/j.mri.2009.06.004.

[A54] Silvia Mangia, Federico Giove, Ivan Tkác, Nikos K. Logothetis, Pierre-Gilles Henry, Cheryl A. Olman, Bruno Maraviglia, Francesco Di Salle, and Kâmil Uğurbil. Metabolic and hemodynamic events after changes in neuronal activity: current hypotheses, theoretical predictions and in vivo NMR experimental findings. *Journal of Cerebral Blood Flow and Metabolism* 29 (2009), 441–463. DOI: 10.1038/jcbfm.2008.134.

[A55] Giovanni Giulietti, Federico Giove, Girolamo Garreffa, Claudio Colonnese, Silvia Mangia, and Bruno Maraviglia. Characterization of the functional response in the human spinal cord: Impulse-response function and linearity. *Neuroimage* 42 (2008), 626–634. DOI: 10.1016/j.neuroimage.2008.05.006.

[A56] Girolamo Garreffa, Soléakhéna Ken, Maria Antonietta Macrì, Giovanni Giulietti, Federico Giove, Claudio Colonnese, Eugenio Venditti, Emilio De Cesare, Vittorio Galasso, and Bruno Maraviglia. BOLD signal and vessel dynamics: a hierarchical cluster analysis. *Magnetic Resonance Imaging* 24 (2006), 411–418. DOI: 10.1016/j.mri.2005.11.004.

[A57] Federico Giove et al. Metabolic alteration transients during paroxysmal activity in an epileptic patient with fixation-off sensitivity: a case study. *Magnetic Resonance Imaging* 24 (2006), 373–379. DOI: 10.1016/j.mri.2005.11.003.

[A58] Maria Antonietta Macrì, Girolamo Garreffa, Federico Giove, Marta Moraschi, Giovanni Giulietti, Nicola Modugno, Claudio Colonnese, and Bruno Maraviglia. A cluster-based quantitative procedure in an fMRI study of Parkinson's disease. *Magnetic Resonance Imaging* 24 (2006), 419–424. DOI: 10.1016/j.mri.2005.12.035.

[A59] Silvia Mangia, Ivan Tkác, Rolf Gruetter, Pierre-Francois Van De Moortele, Federico Giove, Bruno Maraviglia, and Kâmil Uğurbil. Sensitivity of single-voxel 1H-MRS in investigating the metabolism of the activated human visual cortex at 7 T. *Magnetic Resonance Imaging* 24 (2006), 343–348. DOI: 10.1016/j.mri.2005.12.023.

[A60] Federico Giove, Girolamo Garreffa, Giovanni Giulietti, Silvia Mangia, Claudio Colonnese, and Bruno Maraviglia. Issues about the fMRI of the human spinal cord. *Magnetic Resonance Imaging* 22 (2004), 1505–1516. DOI: 10.1016/j.mri.2004.10.015.

[A61] Maria Antonietta Macrì, Girolamo Garreffa, Federico Giove, Manuela Guardati, Anna Ambrosini, Claudio Colonnese, and Bruno Maraviglia. In vivo quantitative 1H MRS of cerebellum and evaluation of quantitation reproducibility by simulation of different levels of noise and spectral resolution. *Magnetic Resonance Imaging* 22 (2004), 1385–1393. DOI: 10.1016/j.mri.2004.10.021.

[A62] Silvia Mangia, Francesco Di Salle, Girolamo Garreffa, Fabrizio Esposito, Federico Giove, Sossio Cirillo, Tommaso Scarabino, Renato Morrone, and Bruno Maraviglia. Perfusion- and BOLD-based fMRI in the study of a human pathological model for task-related flow reductions. *Brain Research Bulletin* 63 (2004), 1–5. DOI: 10.1016/j.brainresbull.2003.10.012.

[A63] Federico Giove, Silvia Mangia., Marta Bianciardi, Girolamo Garreffa, Francesco Di Salle, Renato Morrone, and Bruno Maraviglia. The physiology and metabolism of neuronal activation: in vivo studies by NMR and other methods. *Magnetic Resonance Imaging* 21 (2003), 1283–1293. DOI: 10.1016/j.mri.2003.08.028.

[A64] Maria Antonietta Macrì, Girolamo Garreffa, Federico Giove, Anna Ambrosini, Manuela Guardati, Francesco Pierelli, Jean Schoenen, Claudio Colonnese, and Bruno Maraviglia. Cerebellar metabolite alterations detected in vivo by proton MR spectroscopy. *Magnetic Resonance Imaging* 21 (2003), 1201–1206. DOI: 10.1016/j.mri.2003.08.021.

[A65] Silvia Mangia, Girolamo Garreffa, Marta Bianciardi, Federico Giove, Francesco Di Salle, and Bruno Maraviglia. The aerobic brain: lactate decrease at the onset of neural activity. *Neuroscience* 118 (2003), 7–10. DOI: 10.1016/S0306-4522(02)00792-3.

[A66] SIlvia Mangia, Federico Giove, Marta Bianciardi, Francesco Di Salle, Girolamo Garreffa, and Bruno Maraviglia. Issues concerning the construction of a metabolic model for neuronal activation. *Journal of Neuroscience Research* 71 (2003), 463–467. DOI: 10.1002/jnr.10531.

Papers on national journal

[B1] Federico Giove and Bruno Maraviglia. A Central Frontier for Physics Research: the Human Brain Structure and Function. *Il Nuovo Saggiatore* 27 (2011), 17–23.

Editorials and commentaries

[C1] Thomas Beyer et al. Medical Physics and Imaging – A timely perspective. *Frontiers in Physics* 9 (2021), 634693. DOI: 10.3389/fphy.2021.634693.

[C2] Federico Giove and Itamar Ronen. Editorial: Proceedings of the International School on Magnetic Resonance and Brain Function – XII Workshop. *Frontiers in Physics* 6 (2018), 18. DOI: 10.3389/fphy.2018.00018.

[C3] Silvia Mangia, Mauro DiNuzzo, and Federico Giove. Cell-to-cell lactate shuttle in the brain: is it worth debating? Comments on CrossTalk 35: An important astrocyte-to-neuron lactate shuttle couples neuronal activity to glucose utilisation in the brain / Lack of evidence supporting anastrocyte-to-neuron lactate shuttle coupling neuronal activity to glucose utilisation in the brain. *The Journal of Physiology* 596 (2018), 1–9. DOI: 10.1113/JP274944.

Conference papers on international journal

[D1] Michela Fratini, Paolo Miocchi, Laura Maugeri, Alejandra Sierra, Inna Bukreeva, Fabio Mangini, Antti Nurmi, Olli Gröhn, Federico Giove, and Alessia Cedola. Study of the vascular network in the spinal cord for preclinical application. In: *Journal of Neurology and Neuroscience*. 4th Conference on Neurology and Neurological Disorders (Paris, July 12–13, 2018). Vol. 9. EuroSciCon. 2018, p. 35. DOI: 10.21767/2171-6625-C1-008.

[D2] Michela Fratini, Inna Bukreeva, Gaetano Campi, Raffaele Spanò, Maddalena Mastrogiacomo, Francesco Bruni, Giuliana Tromba, Federico Giove, and Alessia Cedola. Study of the vascular network in the spinal cord using advanced techniques. In: *Journal of Tissue Engineering and Regenerative Medicine*. European Chapter Meeting (Genova, June 10–13, 2014). Vol. 8 Suppl. 1. n. OP280. Tissue Engineering and Regenerative Medicine International Society. 2014, pp. 192–193. DOI: 10.1002/term.1931.

[D3] Silvia Mangia, Mauro DiNuzzo, Federico Giove, Anthony Carruthers, Ian A. Simpson, and Susan J. Vannucci. Lactate shuttle from neurons to astrocytes. In: *Journal of Neuroscience Research*. 10th International Conference on Brain Energy Metabolism — Bioenergetics of Neurological Disease and Aging (Pacific Grove, Apr. 17–20, 2012). Vol. 91. 2013, p. 1089. DOI: 10.1002/jnr.23236.

[D4] Alessandro Gabrielli et al. Preliminary timing measurements on a data acquisition chain for a SiPM-based detector for prostate imaging. In: *Nuclear Physics B-Proceedings Supplements*. 12° Topical Seminar on Innovative Particle and Radiation Detectors (IPRD 10) (Siena, June 7–10, 2010). Vol. 215. 2011, pp. 165–167. DOI: 10.1016/j.nuclphysbps.2011.03.166.

[D5] Franco Garibaldi et al. TOPEM: A multimodality probe (PET TOF, MRI, and MRS) for diagnosis and follow up of prostate cancer. In: *IEEE Nuclear Science Symp. Conf. Record (NSS/MIC)*. 2010 IEEE Nuclear Science Symposium, Medical Imaging Conference, and 17th International Workshop on Room-Temperature Semiconductor X-ray and Gamma-ray Detectors (Knoxville, Oct. 30–Nov. 6, 2010). 2010, pp. 2442–2444. DOI: 10.1109/NSSMIC.2010.5874226.

[D6] Franco Garibaldi et al. TOPEM: a PET TOF probe, compatible with MRI and MRS for diagnosis and follow up of prostate cancer. In: *Molecular Imaging and Biology*. 2010 World Molecular Imaging Congress (Kyoto, Sept. 8–11, 2010). Vol. 12 Suppl. 2. n. 0316B. 2010, S1291. DOI: 10.1007/s11307-010-0453-3.

[D7] Silvia Mangia, Federico Giove, Mauro DiNuzzo, Shalom Michaeli, Anthony Carruthers, and Ian S. Simpson. Human brain metabolism studied by 1-H NMR spectroscopy. In: *Journal of Neurochemistry*. The Third ISN Special Neurochemistry Conference, 8° International Meeting for Brain Energy Metabolism "Neurodegeneration and Regeneration" (Beijing, June 27–July 1, 2008). Vol. 109 Suppl. 1. n. S-18. International Society for Neurochemistry. 2009, pp. 267–268. DOI: 10.1111/j.1471-4159.2009.05927.x.

[D8] Federico Giove, Girolamo Garreffa, Giovanni Giulietti, Claudio Colonnese, and Bruno Maraviglia. Functional MRI of the human spinal cord: attempt at characterizing the temporal respons. In: *Neuroimage*. 12° Annual Meeting (Florence, June 11–15, 2006). Vol. 31 Suppl. 1. n. 165 TH-AM. Organization for Human Brain Mapping. 2006, S2398. DOI: 10.1016/S1053-8119(08)70001-6.

[D9] Giovanni Giulietti, Girolamo Garreffa, Diego De Carli, Federico Giove, Soléakhéna Ken, Giampero Soldati, Francesco Pierelli, Claudio Colonnese, and Bruno Maraviglia. A Laterality Index application: longitudinal study of fMRI activation maps evolution in stroke patients. In: *Neuroimage*. 12° Annual Meeting (Florence, June 11–15, 2006). Vol. 31 Suppl. 1. n. 376 T-PM. Organization for Human Brain Mapping. 2006, S580. DOI: 10.1016/S1053-8119(08)70001-6.

[D10] Soléakhéna Ken, Girolamo Garreffa, Marco Carnì, Federico Giove, Giovanni Giulietti, Ennio Briselli, Diego De Carli, Carlo Di Bonaventura, Anna E. Vaudano, Anna T. Giallonardo, and Bruno Maraviglia. Cerebrovascular dynamics cluster analysis: application to an epilepsy case with a single ictal event. In: *Neuroimage*. 12° Annual Meeting (Florence, June 11–15, 2006). Vol. 31 Suppl. 1. n. 192 TH-PM. Organization for Human Brain Mapping. 2006, S600. DOI: 10.1016/S1053-8119(08)70001-6.

[D11] Marta Moraschi, Girolamo Garreffa, Maria A. Macrì, Federico Giove, Nicola Modugno, Claudio Colonnese, and Bruno Maraviglia. An fMRI study of de novo PD patients: a cluster quantitative analysis. In: *Neuroimage*. 12° Annual Meeting (Florence, June 11–15, 2006). Vol. 31 Suppl. 1. n. 360 T-PM. Organization for Human Brain Mapping. 2006, S2406. DOI: 10.1016/S1053-8119(08)70001-6.

[D12] Federico Giove, Silvia Mangia, Girolamo Garreffa, Giovanni Giulietti, Claudio Colonnese, and Bruno Maraviglia. Functional MR imaging of the human spinal cord at 1.5 T. In: *Neuroimage*. 10° Annual Meeting (Budapest, June 13–17, 2004). Vol. 22 Suppl. 1. n. TH280. Organization for Human Brain Mapping. 2004, e2346–e2347. DOI: 10.1016/S1053-8119(05)70020-3.

[D13] Silvia Mangia, Federico Giove, Marta Bianciardi, Girolamo Garreffa, Francesco Di Salle, and Bruno Maraviglia. Lactate dynamics during activation of the human visual cortex. In: *Neuroimage*. 9° Annual Meeting (New York, June 19–22, 2003). Vol. Vol. 19 Suppl. Organization for Human Brain Mapping. 2003, e544–e545. DOI: 10.1016/S1053-8119(05)70003-3.

Other proceedings

[E1] Daniele Mascali, Antonio M. Chiarelli, Richard G. Wise, and Federico Giove. A quality-control database for the resting-state young-adult human connectome project. In: *Book of Proceedings*. 29˚ Virtual Scientific Meeting (May 15–20, 2021). n. 3145. International Society for Magnetic Resonance in Medicine. 2021.

[E2] Marta Moraschi, Laura Maugeri, Silvia Tommasin, Mauro DiNuzzo, Julien Cohen-Adad, Fabio Mangini, Daniele Mascali, Federico Giove, and Michela Fratini. Development of an optimized approach to spinal cord fMRI based on the combination of an ad hoc acquisition method and data analysis pipeline. In: *Book of Proceedings*. 29˚ Virtual Scientific Meeting (May 15–20, 2021). n. 4186. International Society for Magnetic Resonance in Medicine. 2021.

[E3] Michela Fratini, Mauro DiNuzzo, Marta Moraschi, Laura Maugeri, Fabio Mangini, Daniele Mascali, and Federico Giove. Study of the Spinal Cord BOLD functional response. In: *Book of Proceedings*. 28˚ Virtual Scientific Meeting (Aug. 8–14, 2020). n. 3823. International Society for Magnetic Resonance in Medicine. 2020.

[E4] Mauro DiNuzzo, Marta Moraschi, Julien Cohen-Adad, Fabio Mangini, Laura Maugeri, Daniele Mascali, Federico Giove, and Michela Fratini. Towards a Standard Pipeline for the Analysis of Human Spinal Cord fMRI Data Series. In: *Book of Proceedings*. 27˚ Scientific Meeting (Montréal, May 11–16, 2019). n. 919. International Society for Magnetic Resonance in Medicine. 2019.

[E5] Fabio Mangini, Laura Maugeri, Mauro DiNuzzo, Marta Moraschi, Daniele Mascali, Alejandra Sierra, Alessia Cedola, Federico Giove, and Michela Fratini. Effects of Spinal Cord vascular geometry on the BOLD-fMRI contrast. In: *Book of Proceedings*. 27˚ Scientific Meeting (Montréal, May 11–16, 2019). n. 3769. International Society for Magnetic Resonance in Medicine. 2019.

[E6] Daniele Mascali, Silvia Tommasin, Marta Moraschi, Tommaso Gili, Ibrahim Eid Assan, Michela Fratini, Richard G. Wise, Emiliano Macaluso, Silvia Mangia, and Federico Giove. Multi-scale assessment of brain networks response to sustained working memory task. In: *Book of Proceedings*. 26˚ Scientific Meeting (Paris, June 16–21, 2018). n. 2318. International Society for Magnetic Resonance in Medicine. 2018.

[E7] Michela Fratini, Inna Bukreeva, Gaetano Campi, Francesco Bruna, Peter Modregger, Maddalena Mastrogiacomo, Herwig Requardt, Federico Giove, Alberto Bravin, and Alessia Cedola. X-ray Phase-Contrast multiscale tomography for the 3D quantitative investigation of the spinal cord neuronal arrangements for preclinical application. In: *Book of Proceedings*. 103˚ Congresso Nazionale (Trento, Sept. 11–15, 2017). atticon10620 V-C-46. Società Italiana di Fisica. 2017.

[E8] Michela Fratini, Inna Bukreeva, Gaetano Campi, Francesco Bruna, Peter Modregger, Maddalena Mastrogiacomo, Herwig Requardt, Federico Giove, Alberto Bravin, and Alessia Cedola. X-ray Phase-Contrast multiscale tomography for the 3D quantitative investigation of the spinal cord neuronal arrangements for preclinical application. In: *Book of Proceedings*. Biophysics@Rome2017 (Rome, May 18–19, 2017). Tech4Bio. 2017.

[E9] Fabio Mangini, Marta Moraschi, and Federico Giove. Whole Brain Mapping of the Hemodynamic Response Function. In: *Book of Proceedings*. Biophysics@Rome2017 (Rome, May 18–19, 2017). Tech4Bio. 2017.

[E10] Daniele Mascali, Emily Kittelson, Keith Jamison, Kâmil Uğurbil, Essa Yacoub, Shalom Michaeli, Lynn Eberly, Melissa Terpstra, Federico Giove, and Silvia Mangia. Human Connectome Project (HCP) Lifespan Pilot: age–course of structural, microstructural and functional parameters in the hubs of the default mode network. In: *Book of Proceedings*. 25˚ Scientific Meeting (Honolulu, Apr. 22–27, 2017). n. 4266. International Society for Magnetic Resonance in Medicine. 2017.

[E11] Daniele Mascali, Emily Kittelson, Keith Jamison, Kâmil Uğurbil, Essa Yacoub, Shalom Michaeli, Melissa Terpstra, Federico Giove, and Silvia Mangia. How to spend your time? Using multi–echo acquisition versus increasing sampling rate in resting-state fMRI. In: *Book of Proceedings*. 25˚ Scientific Meeting (Honolulu, Apr. 22–27, 2017). n. 5039. International Society for Magnetic Resonance in Medicine. 2017.

[E12] Laura Maugeri, Michela Fratini, Marta Moraschi, Paul E. Summers, Stefania Favilla, Alessia Cedola, Carlo A. Porro, and Federico Giove. Study of the spinal cord and brainstem functional activation in response to a controlled motor task using fMRI. In: *Book of Proceedings*. International Workshop on Imaging (Villa Monastero, Varenna, Sept. 4–8, 2017). Piero Caldirola International Center for the Promotion of Science and International School of Plasma Physics. 2017.

[E13] Laura Maugeri, Marta Moraschi, Paul E. Summers, Stefania Favilla, Alessia Cedola, Carlo A. Porro, Michela Fratini, and Federico Giove. Study of the spinal cord and brainstem functional activation in response to a controlled motor task using fMRI. In: *Book of Proceedings*. 103˚ Congresso Nazionale (Rome, Sept. 11–15, 2017). atticon10637 V-C-51. Società Italiana di Fisica. Trento, 2017.

[E14] Laura Maugeri, Marta Moraschi, Paul E. Summers, Stefania Favilla, Alessia Cedola, Carlo A. Porro, Michela Fratini, and Federico Giove. Study of the spinal cord and brainstem functional activation in response to a controlled motor task using fMRI. In: *Book of Proceedings*. Biophysics@Rome2017 (Rome, May 18–19, 2017). Tech4Bio. 2017.

[E15] Eleonora Stefanutti et al. Multimodal approach for the 3D investigation of the murine spinal cord and brain neuronal and vascular networks. In: *Book of Proceedings*. International Workshop on Imaging (Villa Monastero, Varenna, Sept. 4–8, 2017). Piero Caldirola International Center for the Promotion of Science and International School of Plasma Physics. 2017.

[E16] Silvia Tommasin, Daniele Mascali, Tommaso Gili, and Federico Giove. Spatial and temporal modulation of brain dynamics in response to task execution. In: *Book of Proceedings*. 24˚ Scientific Meeting (Singapore, May 7–13, 2016). n. 1700. International Society for Magnetic Resonance in Medicine. 2016.

[E17] Petr Bednařík, Ivan Tkáč, Federico Giove, Dinesh Deelchand, Lynn Eberly, Felipe Barreto, and Silvia Mangia. Neurochemical and BOLD Responses in Activated Blob and Interblob Neuronal Populations Measured in the Human Visual Cortex at 7T. In: *Book of Proceed-*

ings. 23° Scientific Meeting (Toronto, May 30–June 5, 2015). n. 896. International Society for Magnetic Resonance in Medicine. 2015, p. 147.

[E18] Petr Bednařik, Ivan Tkáč, Federico Giove, Dinesh K. Deelchand, and Silvia Mangia. Correlations Between BOLD and Neurochemical Responses Measured in the Human Visual Cortex at 7T. In: *Book of Proceedings*. 22° Scientific Meeting (Milan, May 10–16, 2014). n. 693. International Society for Magnetic Resonance in Medicine. 2014, p. 120.

[E19] Mauro DiNuzzo, Silvia Mangia, Bruno Maraviglia, and Federico Giove. Effect of short-term synaptic plasticity on the relationship between neuronal activity, BOLD, CMR_{O_2} and CMR_{Glc} studied by metabolic modeling of neuron–glia interaction. In: *Book of Proceedings*. 22° Scientific Meeting (Milan, May 10–16, 2014). n. 1884. International Society for Magnetic Resonance in Medicine. 2014, p. 284.

[E20] Mauro DiNuzzo, Daniele Mascali, Bruno Maraviglia, Laura Serra, Marco Bozzali, and Federico Giove. Decreased parietal but increased frontal amplitude of low-frequency fluctuations of blood oxigenation coexists with the ubiquitous loss of functional connectivity in Alzheimer's disease. In: *Biophysics & BioEngineering Letters*. The CISB scientific activity at CISB: recent and seminal achievements (Rome, May 29–30, 2014). Vol. 7. 2. Centro Interdipartimentale di Ricerca per lo Studio dei Modelli e dell'Informazione nei Sistemi Biomedici. 2014, Proc41–Proc48.

[E21] Mauro DiNuzzo, Daniele Mascali, Marta Moraschi, Michela Fratini, Tommaso Gili, Girolamo Garreffa, Bruno Maraviglia, and Federico Giove. Shannon Entropy Method Applied to fMRI Data Series During Evoked and Resting State Activity. In: *Book of Proceedings*. 22° Scientific Meeting (Milan, May 10–16, 2014). n. 4133. International Society for Magnetic Resonance in Medicine. 2014, p. 552.

[E22] Mauro DiNuzzo, Daniele Mascali, Marta Moraschi, Michela Fratini, Tommaso Gili, Girolamo Garreffa, Bruno Maraviglia, Laura Serra, Marco Bozzali, and Federico Giove. Rethinking Correlation in the Brain: A Resting-State fMRI Study on the Progression of Cognitive Decline. In: *Book of Proceedings*. 22° Scientific Meeting (Milan, May 10–16, 2014). n. 3051. International Society for Magnetic Resonance in Medicine. 2014, p. 423.

[E23] Michela Fratini, Marta Moraschi, Bruno Maraviglia, Federico Giove, Paul E. Summers, Stefania Favilla, and Carlo A. Porro. Study of the Linearity in BOLD Response in Spinal fMRI. In: *Book of Proceedings*. 22° Scientific Meeting (Milan, May 10–16, 2014). n. 3032. International Society for Magnetic Resonance in Medicine. 2014, p. 421.

[E24] Mauro DiNuzzo, Federico Giove, and Bruno Maraviglia. Modeling the non-neuronal contribution to the blood oxygenation level dependent fMRI signal oscillations. In: *Book of Proceedings*. 18° Scientific Meeting (Stockholm, May 1–7, 2010). International Society for Magnetic Resonance in Medicine. 2010, p. 1121.

[E25] Mauro DiNuzzo, Federico Giove, and Bruno Maraviglia. Uncoupled couplings: combined fMRI and ^{1}H–MRS for the study of the neurovascular and neurometabolic coupling. In: *Book of Proceedings*. 18° Scientific Meeting (Stockholm, May 1–7, 2010). International Society for Magnetic Resonance in Medicine. 2010, p. 1118.

[E26] Mauro DiNuzzo, Bruno Maraviglia, and Federico Giove. ^{1}H–MRS and fMRI for the assessment of neurometabolic coupling during visual stimulation. In: *Book of Proceedings*. 1° Annual Meeting (Milano, Feb. 4–5, 2010). Italian Chapter of the International Society for Magnetic Resonance in Medicine. 2010.

[E27] Tommaso Gili, Ibrahim Eid, Federico Giove, Vittorio Iacovella, Emiliano Macaluso, Richard G. Wise, and Bruno Maraviglia. ICA–based artifact removal in functional connectivity analysis: what global signal doesn't hide. In: *Book of Proceedings*. 16° Annual Meeting (Barcelona, June 6–10, 2010). n. 1350. Organization for Human Brain Mapping. 2010, p. 204.

[E28] Federico Giove, Francesco Marcocci, Fabrizio Fasano, Mauro DiNuzzo, Gisela E. Hagberg, and Bruno Maraviglia. Skewed adiabatic pulses for outer volume suppression in single voxel spectroscopy. In: *Book of Proceedings*. 18° Scientific Meeting (Stockholm, May 1–7, 2010). International Society for Magnetic Resonance in Medicine. 2010, p. 966.

[E29] Marta Moraschi, Gisela E. Hagberg, Giovanni Giulietti, Margherita Di Paola, Gianfranco Spalletta, Bruno Maraviglia, and Federico Giove. DTI in the clinic: evaluating the effects of smoothing. In: *Book of Proceedings*. 18° Scientific Meeting (Stockholm, May 1–7, 2010). International Society for Magnetic Resonance in Medicine. 2010, p. 1646.

[E30] Marta Moraschi, Gisela E. Hagberg, Giovanni Giulietti, Margherita Di Paola, Gianfranco Spalletta, Bruno Maraviglia, and Federico Giove. Isotropic and anisotropic smoothing for DTI processing in the clinic: stability of the results. In: *Book of Proceedings*. 1° Annual Meeting (Milano, Feb. 4–5, 2010). Italian Chapter of the International Society for Magnetic Resonance in Medicine. 2010.

[E31] Tommaso Gili, Federico Giove, Vittorio Iacovella, Emiliano Macaluso, and Bruno Maraviglia. The intrinsic activity of the brain can be modulated by cognitive load. In: *Book of Proceedings*. 17° Scientific Meeting (Honolulu, Apr. 17–24, 2009). n. 3688. International Society for Magnetic Resonance in Medicine. 2009, p. 432.

[E32] Giovanni Giulietti, Federico Giove, Paul E. Summers, Diana Ferraro, Marco Carnì, Carlo Porro, and Bruno Maraviglia. Geometric distortions quantification in EPI images for evaluating the reliability of a spinal cord segmentation algorithm. In: *Book of Proceedings*. 26° Annual Meeting (Antalya, Oct. 1–3, 2009). n. 591. European Society for Magnetic Resonance in Medicine and Biology. 2009, p. 431.

[E33] Tommaso Gili, Laura Serra, Federico Giove, Delia Lenzi, Emiliano Macaluso, Bruno Maraviglia, and Marco Bozzali. Resting state fMRI of the early stages of Alzheimer's Disease. In: *Book of Proceedings*. 16° Scientific Meeting (Toronto, May 3–9, 2008). International Society for Magnetic Resonance in Medicine. 2008, p. 3534.

[E34] Giovanni Giulietti, Federico Giove, Girolamo Garreffa, Claudio Colonnese, and Bruno Maraviglia. Automatic segmentation of human spinal canal on EPI images using kmeans clustering. In: *Book of Proceedings*. 25° Annual Meeting (Valencia, Oct. 2–4, 2008). n. 709. European Society for Magnetic Resonance in Medicine and Biology. 2008, p. 359.

[E35] Soléakhéna Ken, Marco Carnì, Carlo Di Bonaventura, Giovanni Giulietti, Federico Giove, Diego De Carli, Girolamo Garreffa, Anna Teresa Giallonardo, and Bruno Maraviglia. Simultaneous EEG/fMRI data in epileptic patients with generalized spikes and waves discharges and absence analyzed with PICA. In: *Book of Proceedings*. 25° Annual Meeting (Valencia, Oct. 2–4, 2008). n. 669. European Society for Magnetic Resonance in Medicine and Biology. 2008, p. 336.

[E36] Marta Moraschi, Federico Giove, Giovanni Giulietti, Gianfranco Spalletta, Gisela Hagberg, and Bruno Maraviglia. Comparison of isotropic and anisotropic smoothing in voxel-based analysis of DTI data in Alzheimer Disease. In: *Book of Proceedings*. 25° Annual Meeting (Valencia, Oct. 2–4, 2008). n. 636. European Society for Magnetic Resonance in Medicine and Biology. 2008, p. 322.

[E37] Antonio Napolitano, Federico Giove, Gianfranco Spalletta, Dorothee P. Auer, and Bruno Maraviglia. Shortening of metabolite relaxation times of prefrontal cortex in mild cognitive impairment. In: *Book of Proceedings*. 16° Scientific Meeting (Toronto, May 3–9, 2008). International Society for Magnetic Resonance in Medicine. 2008, p. 1567.

[E38] Giovanni Giulietti, Federico Giove, Girolamo Garreffa, Eugenio Venditti, Claudio Colonnese, and Bruno Maraviglia. Spinal cord fMRI: functional response and linear model assessment. In: *Book of Proceedings*. 15° Scientific Meeting (Berlin, May 19–25, 2007). International Society for Magnetic Resonance in Medicine. 2007, p. 3201.

[E39] Stefano Peca, Federico Giove, Marco Carnì, Girolamo Garreffa, Maria Antonietta Macrì, Carlo Di Bonaventura, Anna Elisabetta Vaudano, Anna Teresa Giallonardo, Taryn Aprile, Gisela E. Hagberg, Massimiliano Principe, and Bruno Maraviglia. Dynamic Glu+Gln alterations in a FOS patient investigated by 1H–fMRS and CSI. In: *Book of Proceedings*. 15° Scientific Meeting (Berlin, May 19–25, 2007). International Society for Magnetic Resonance in Medicine. 2007, p. 767.

[E40] Silvia Mangia, Ivan Tkac, Pierre-Francois Van de Moortele, Marija Marjanska, Federico Giove, Marta Bianciardi, Francesco Di Salle, Girolamo Garreffa, Bruno Maraviglia, and Kamil Ugurbil. Functional NMR spectroscopy of the human brain at 7T: an event-related study. In: *Book of Proceedings*. 13° Scientific Meeting (Miami, May 7–13, 2005). International Society for Magnetic Resonance in Medicine. 2005, p. 1548.

[E41] Federico Giove, Silvia Mangia, Girolamo Garreffa, Giovanni Giulietti, Claudio Colonnese, and Bruno Maraviglia. Functional NMR imaging of the spinal cord at 1.5T. In: *Book of Proceedings*. INFMeeting, National Conference on the Physics of the Matter (Genova, June 23–25, 2003). Istituto Nazionale di Fisica della Materia. 2003, pp. 85–86.

[E42] Maria Antonietta Macrì, Girolamo Garreffa, Federico Giove, Anna Ambrosini, Manuela Guardati, Francesco Pierelli, Jean Schoenen, Claudio Colonnese, and Bruno Maraviglia. An in vivo ^{1}H MRS investigation of cerebellum: an alternative approach for the assessment of some metabolic dysfunctions. In: *Book of Proceedings*. INFMeeting, National Conference on the Physics of the Matter (Genova, June 23–25, 2003). Istituto Nazionale di Fisica della Materia. 2003, p. 86.

[E43] Silvia Mangia, Girolamo Garreffa, Marta Bianciardi, Federico Giove, Francesco Di Salle, Renato Morrone, and Bruno Maraviglia. Lactate concentration during neuronal activation studied by ^{1}H–MRS. In: *Book of Proceedings*. INFMeeting, National Conference on the Physics of the Matter (Roma, June 18–21, 2001). Istituto Nazionale di Fisica della Materia. 2001, p. 159.

[E44] Silvia Mangia, Girolamo Garreffa, Francesco Di Salle, Renato Morrone, Federico Giove, and Bruno Maraviglia. Evaluation of cerebral perfusion by ASL (Arterial Spin Labeling) techniques in healthy and pathological condition. In: *Book of Proceedings*. INFMeeting, National Conference on the Physics of the Matter (Roma, June 18–21, 2001). Istituto Nazionale di Fisica della Materia. 2001, p. 104.

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