

Prof. Dr. Lydia MAIGNE, PhD

Professor of medical and particle physics

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CAREER

2025 - Present	Professor of medical and particle physics	UCA-LPCA
2006-2025	Associate professor of medical physics	UCA-LPCA
2006	Clinical medical physicist	Centre Jean Perrin cancer centre

EDUCATION

2013	Habilitation for research supervision (HDR)	UCA-LPCA
2006	Medical physics graduate	INSTN
2002-2005	PhD in particle physics (07/11/2005) <i>Thesis title: Personalized dosimetry using GATE Monte Carlo simulations on a grid architecture. Application in ocular brachytherapy.</i>	UCA-LPCA

RESEARCH ACTIVITIES: GRANTS and RESPONSIBILITIES

GRANTS

January 2025 – January 2028 Partner of the IRHydroBRAIN project, Radiolabeled Chitosan Hydrogel for Internal Radiation Therapy of Glioblastoma (160 k€), 3-year project funded by the French National Research Agency (ANR-24-CE19-6774) to develop and test an innovative strategy for intraoperative internal RT of glioblastoma using functionalization characteristics of radiolabelled chitosan hydrogel.

October 2022 – October 2025 Partner of the ImaGa project, New gallium-68 complexes for PET imaging of aggrecans (25 k€), 3-year project funded by ANR (ANR-22-CE19-0021) to develop and test a new gallium-68 radiotracer highly specific to articular cartilage proteoglycan aggrecan.

January 2021 – January 2025 Partner of the RAMONES project: Radioactivity Monitoring in Ocean Ecosystems (150 k€), 4-year project, European call: H2020-FETPROACT-2018-2020.

November 2020 – November 2023 Partner of the FLASHMOD project (call PCSI 2020), End-to-end dosimetry for preclinical proton FLASH irradiation at ARRONAX (80 k€), 3-year project funded by INSERM (PCSI call 2019).

Since September 2019 Partner of a phase I clinical transfer, approved by ANSM (MEDAECNAT-2018-06-00055) to test ¹³¹I-ICF01012. In charge of dose calculations to patients using the GATE platform.

May 2015 – July 2019 Partner of the A-SPECT project: A highly Sensitive ^{99m}Tc-NTP 15-5 SPECT imaging targeting proteoglycans for assessing osteoarthritis response to innovative therapeutic approaches (72 k€), 3-year project funded by ANR (ANR-15-CE18-0003).

June 2013 – June 2015 Coordinator of the RACE project (RADIation resistance of Cancer CELls using GEANT4 DNA), 2-year project funded by INSERM (PCSI call 2013).

September 2011- September 2013 Coordinator of the DOGME project (DOSimetry through GATE Monte Carlo simulations for an innovative targeted radionuclide therapy of MELanoma). 2-year project funded by INSERM (PCSI call 2011).

April 2011 – December 2014 Coordinator of the GINSENG project (Global Initiative for Sentinel E-health Network on Grid), 3-year project funded by ANR (ANR-10-TECS-0008) to enable a grid sentinel network for e-health, epidemiology and health watch.

RESPONSIBILITIES

Since 2025 - Nominated member of the steering board of section 04 (nuclear and particle physics) of the CNRS National Committee

From 2020 to 2025 - Nominated & elected member of section 29 (particle physics) of the National Committee of Universities

Since 2019 - Member of the GDR Mi2b steering board, <https://mi2b.fr/>

Since 2018 - Member of the laboratory of Excellence (LabEx) PRIMES steering board (Physics, Radiobiology, Medical Imaging and Simulation). Coordinator of WP5: Modelling and Simulation, <http://primes.universite-lyon.fr/>

Since 2018 – Spokesperson of the scientific OpenGATE collaboration

AWARDS

2015

Citation prize for the OpenGATE collaboration paper “GATE V6: a major enhancement of the GATE simulation platform enabling modelling of CT and radiotherapy 2011 *Phys. Med. Biol.* **56** 881-901” that has received the largest number of citations in the preceding five years in Physics in Medicine and Biology.

December 2010

IN2P3 valorization prize for the applied research of the PCSV team on biomedical informatics on grid, on in-silico drug discovery, and on the sentinel grid network for cancer surveillance in Auvergne.

November 2009

Citation prize for the OpenGATE collaboration paper “GATE: a simulation toolkit for PET and SPECT”, *Phys. Med. Biol.*, 49 (2004) 4543-4561” that has received the largest number of citations in the preceding five years in Physics in Medicine and Biology.

EDITORIAL RESPONSIBILITIES

2019-2022: Associate Editor of *Physica Medica*, *European Journal of Medical Physics*.

TEACHING ACTIVITIES (250 hours/year)

Department of Thermodynamics and Energy (IUT Clermont Auvergne, UCA)

- Mathematics and physics courses

Master 2 Nuclear Engineering (University Clermont Auvergne)

Master 2 Radioprotection (University of Caen Normandie)

CNRS Formation Entreprises

- Medical physics courses and tutorials: Monte Carlo calculations, particle interactions, medical imaging using the GATE platform

PhD STUDENT SUPERVISION & CO-SUPERVISION (8)

2023-2026 – Daeun Kwon (CNRS)

Monte Carlo simulations of microdosimetry and production of radiolytic species for preclinical H⁺ and He²⁺ ion beams at very high dose rates using GATE and Geant4-DNA.

2022-2025 – Gaëtan Raymond (CIFRE Siemens)

Siemens SOMATOM Go Open Pro scanner performance evaluation using the GATE Monte Carlo platform

2019-2022 – Sofia Kolovi (CNRS)

Simulation of the radiation damage induced to diatoms due to the natural radioactivity in mineral springs

2018-2021 – Yasmine Ali (LabEX PRIMES)

Biological dose estimation in hadrontherapy using the GATE Monte Carlo simulation platform

2012-2015 – Sébastien Cypièrre (ANR)

A mediation system in the medical community based on engineering models and ontologies and using the Common Warehouse Metamodel.

2011-2014 – Trung Quang Pham (Conseil Général de l'Allier)

Coupling and validation of the Geant4-DNA extension into the Gate Monte Carlo simulation platform for the irradiation of DNA molecules in a grid computing environment

2009-2011 - Yann Perrot (Conseil Général de l'Allier)

Evaluation of the dose deposited by electron beams in radiotherapy in voxelized phantoms using the Monte Carlo GATE simulation platform based on GEANT4 in a grid environment

2008-2011 – Paul De Vlieger (CNRS)

Creating a "grid" database management environment: application to medical data exchange

PUBLICATIONS (43)

1. N. Krah et al. GATE 10 Monte Carlo particle transport simulation -Part II: architecture and innovations. Phys. Med. Biol. 2025 <https://doi.org/10.1088/1361-6560/ae237c>
2. D. Sarrut et al. GATE 10 Monte Carlo particle transport simulation Part I: development and new features. Phys. Med. Biol. 2025 <https://doi.org/10.1088/1361-6560/ae237b>
3. M. Chanchou, E. Thivat, S. Mathieu, S. Levesque, N. Sas, P. Auzeloux, T. Billoux, I. Molnar, E. Jouberton, J. Rouanet, G.R. Fois, L. Maigne, F. Penault-Llorca, E. Miot-Noirault, X. Durando and F. Cachin [99mTc]Tc-NTP 15 – 5, a new proteoglycan tracer for functional imaging of joint cartilage: phase I (CARSPECT). *EJNMMI Research*, 2025, 15, <https://doi.org/10.1186/s13550-025-01318-3>
4. V. Levrague, M. Alcocer-Ávila, S. L. Otmani, L. Maigne, E. Testa, M. Beuve, R. Delorme Impact of intracellular radionuclide distribution in a Monte Carlo biophysical 3D multi-cellular model for targeted alpha therapy Med. Phys. 2025 <https://doi.org/10.1002/mp.17917>
5. G R. Fois, S. Kolovi, V. Breton, A. Pereda, P. Chardon, D. Llanes Vega, L. Terray, L. Maigne (2025) GATE MARIM DB, a Monte Carlo database for dose assessment of microorganisms exposed to natural α -radioactivity *Journal of Environmental Radioactivity* 283: 107639 <https://doi.org/10.1016/j.jenvrad.2025.107639>
6. G R. Fois, H N. Tran, V. Fiegel, G. Blain, S. Chiavassa, E. Craff, G. Delpon, M. Evin, F. Haddad, S. Incerti, C. Koumeir, V. Métivier, Q. Mouchard, F. Poirier, V. Potiron, N. Servagent, J. Vandenborre and L. Maigne (2024) Monte Carlo simulations of microdosimetry and radiolytic species production at long time post proton irradiation using GATE and Geant4-DNA. *Med. Phys.* 51(10), pp7500-7510 <https://doi.org/10.1002/mp.17281>

7. S. Kolovi, G R. Fois, S. Lanouar, P. Chardon, D. Miallier, L-A. Baker, C. Bailly, A. Beauger, D. G. Biron †, K. David, G. Montavon, T. Pilleyre, B. Schoefs, V. Breton, L. Maigne, with the TIRAMISU Collaboration (2023) Assessing radiation dosimetry for microorganisms in naturally radioactive mineral springs using GATE and Geant4-DNA Monte Carlo simulations. *PLOS ONE* 18(10): e0292608. <https://doi.org/10.1371/journal.pone.0292608>
8. D. Sarrut, N. Arbor, T. Baudier, D. Borys, A. Etxebeste, H. Fuchs, J. Gajewski, L. Grevillot, S. Jan, G. C. Kagadis, H.G. Kang, A. Kirov, O. Kochebina, W. Krzemien, A. Lomax, P. Papadimitroulas, C. Pommranz, E. Roncali, A. Rucinski, C. Winterhalter, L. Maigne, The OpenGATE ecosystem for Monte Carlo simulation in medical physics, 2022 *Phys. Med. Biol.* 67 184001. <https://doi.org/10.1088/1361-6560/ac8c83>
9. Thivat E., Chanchou M., Mathieu S., Levesque S., Billoux T., Auzeloux P., Sas N., Molnar I., Jouberton E., Rouanet J., Fois G., Maigne L., Galmier M.-J., Penault-Llorca F., Miot-Noirault E., Durando X., Cachin F. (2022-10-12). Assessment of 99mTc-NTP 15-5 uptake on cartilage, a new proteoglycan tracer: Study protocol for a phase I trial (CARSPECT). *Frontiers in Medicine*, 9, 993151, <https://doi.org/10.3389/fmed.2022.993151>
10. Thivat E., Rouanet J., Auzeloux P., Sas N., Jouberton E., Levesque S., Billoux T., Mansard S., Molnar I., Chanchou M., Fois G., Maigne L., Chezal J.-M., Miot-Noirault E., D'incan M., Durando X., Cachin F. (2022). Phase I study of [131I] ICF01012, a targeted radionuclide therapy, in metastatic melanoma: MELRIV-1 protocol. *BMC Cancer*, 22 (1), 417, <https://doi.org/10.1186/s12885-022-09495-3>
11. G. Blain J. Vandenborre, D. Villoing, V. Fiegel, GR Fois, F. Haddad, C. Koumeir, L. Maigne, V. Métivier, F. Poirier, V. Potiron, S. Supiot, N. Servagent, G. Delpon, S. Chiavassa Proton Irradiations at Ultra-High Dose Rate vs. Conventional Dose Rate: Strong Impact on Hydrogen Peroxide Yield. *Radiat Res.* 2022 Jun 8. <https://doi.org/10.1667/RADE-22-00021.1>
12. Y. Ali, C. Monini, E. Russeil, J M Létang, E. Testa, L. Maigne, M. Beuve Estimate of the biological dose in hadrontherapy using GATE, *Cancers* 2022, 14(7), 1667; <https://doi.org/10.3390/cancers14071667>
13. Y. Ali, L. Auzel, C. Monini, K. Kriachok, J. M. Létang, E. Testa, L. Maigne, M. Beuve Monte Carlo simulations of nanodosimetry and radiolytic species production for monoenergetic proton and electron beams. Benchmarking of GEANT4-DNA and LPCHEM codes, *Med. Phys.* 2022 May;49(5):3457-3469. <https://doi.org/10.1002/mp.15609>
14. Chanchou M., Rouanet J., Auzeloux P., Levesque S., Billoux T., Sas N., Maigne L., Dincan M., Durando X., Cachin F. (2021-07). Radiothérapie interne du mélanome métastatique par [131I]ICF01012 : phase I. *Médecine Nucléaire - Imagerie Fonctionnelle et Métabolique*, 45 (4), 175, <https://doi.org/10.1016/j.mednuc.2021.06.008>
15. L. Maigne, H. Payno, E. Debiton, F. Degoul, G. Fois, S. Incerti, F. Smekens CPOP : an open source C++ Cell POPulation modeler for radiation biology applications, *Physica Medica* 89 (2021) 41-50, <https://doi.org/10.1016/j.ejmp.2021.07.016>
16. G. R. Fois, C. Valla, E. Jouberton, N. Sas, T. Billoux, P. Auzeloux, F. Cachin, E. Miot-Noirault and L. Maigne, Internal dosimetry of [99mTc]NTP15-5 radiotracer for cartilage imaging in preclinical and clinical models using the GATE Monte Carlo platform, *Med. Phys.*, 2020 Jan;48(1):477-487. <https://doi.org/10.1002/mp.14603>
17. C. Winterhalter, M. Taylor, D. Boersma, A. Elia, S. Guatelli, R. Mackay, K. Kirkby, L. Maigne, V. Ivanchenko, A. F. Resch, D. Sarrut, P. Sitch, M. Vidal, L. Grevillot, A. Aitkenhead, Evaluation of GATE-RTion (GATE/Geant4) Monte Carlo simulation settings for proton pencil beam scanning quality assurance. *Med. Phys.* 2020 Nov;47(11):5817-5828. <https://doi.org/10.1002/mp.14481>
18. L. Grevillot, D. J. Boersma, H. Fuchs, A. Aitkenhead, A. Elia, M. Bolsa, C. Winterhalter, M. Vidal, S. Jan, U. Pietrzyk, L. Maigne, D. Sarrut Technical Note: GATE-RTion: a GATE/Geant4

- release for clinical applications in scanned ion beam therapy, *Med. Phys.* 2020, 47:3675-3681, <https://doi.org/10.1002/mp.14242>
19. N. Lampe, P. Marin, M. Coulon, P. Micheau, L. Maigne, D. Sarramia, F. Piquemal, S. Incerti, D.G. Biron, C. Ghio, T. Sime-Ngando, T. Hindre and V. Breton Reducing the ionizing radiation background does not significantly affect the evolution of *Escherichia coli* populations over 500 generations *Sci Rep* 9, 14891 (2019) [doi:10.1038/s41598-019-51519-9](https://doi.org/10.1038/s41598-019-51519-9)
 20. A. Rondon, S. Schmitt, A. Briat, N. Ty, L. Maigne, M. Qunitana, R. Membreno, B.M. Zeglis, I. Navarro-Teulon, J-P. Pouget, J-M. Chezal, E. Miot-Noirault, E. Moreau and F. Degoul Pretargeted radioimmunotherapy and SPECT imaging of peritoneal carcinomatosis using biorthogonal click chemistry : probe selection and first proof-of-concept, *Theranostics* 2019 9 (22): 6706-6718. [Doi:10.7150/thno.35461](https://doi.org/10.7150/thno.35461)
 21. E. Jouberton, Y. Perrot, B. Dirat, T. Billoux, P. Auzeloux, P. Labarre, J-M Chezal, C. Valla, M. Filaire, A. Vidal, C. Millardet, E. Miot-Noirault, F. Cachin, F. Degoul and L. Maigne Radiation dosimetry of [¹³¹I]ICF01012 in rabbits: application to targeted radionuclide therapy for human melanoma treatment, *Med Phys.* 2018 45 (11): 5251-5262, <https://doi.org/10.1002/mp.13165>.
 22. N. Lampe, DG Biron, JMC Brown, S. Incerti, P. Marin, L. Maigne, D. Sarramia, H. Seznec, V. Breton, (2016) Simulating the Impact of the Natural Radiation Background on Bacterial Systems: Implications for Very Low Radiation Biological Experiments. *PLOS ONE* 11(11): e0166364. <https://doi.org/10.1371/journal.pone.0166364>
 23. A. Besset-Maisonia, T. Witkowski, I. Navarro-Teulon, O. Berthier-vergnes, G. Fois, Y. Zhu, S. Besse, O. Bawa, A. Briat, M. Quintana, A. Pichard, M. Bonnet, E. Rubinstein, J-P Pouget, P. Opolon, L. Maigne, E. Miot-Noirault, J-M Chezal, C. Boucheix, and F. Degoul, Tetraspanin 8 (tsan 8) as a potential target for radioimmunotherapy of colorectal cancer, *Oncotarget*. 2017 Mar 28;8(13):22034-22047. <https://doi.org/10.18632/oncotarget.15787>.
 24. M.A. Bernal, M.C. Bordage, J.M.C. Brown, M. Davidková, E. Delage, Z. El Bitar, S.A. Enger, Z. Francis, S. Guatelli, V.N. Ivanchenko, M. Karamitros, I. Kyriakou, L. Maigne, S. Meylan, K. Murakami, S. Okada, H. Payno, Y. Perrot, I. Petrovic, Q.T. Pham, A. Ristic-Fira, T. Sasaki, V. Štěpán, H.N. Tran, C. Villagrasa, S. Incerti Track structure modeling in liquid water: A review of the Geant4-DNA very low energy extension of the Geant4 Monte Carlo simulation toolkit 2015 *Physica Medica* 31 861-874 <https://doi.org/10.1016/j.ejmp.2015.10.087>
 25. P. Schweitzer, S. Cipièrre, A. Dufaure, H. Payno, Y. Perrot, D. R. C. Hill and L. Maigne Performance evaluation of multi-threaded Geant4 simulations using an Intel Xeon Phi cluster *Scientific Programming*, vol. 2015, Article ID 980752, 10 pages, <http://dx.doi.org/10.1155/2015/980752>
 26. Q.T. Pham, A. Anne, M. Bony, E. Delage, D. Donnarieix, A. Dufaure, M. Gautier, S. B. Lee, P. Micheau, G. Montarou, Y. Perrot, J.I. Shin, S. Incerti and L. Maigne Coupling of Geant4-DNA physics models into the GATE Monte Carlo platform: evaluation of radiation-induced damages for clinical and preclinical radiation therapy beams *NIM B: Beam Interactions with Materials and Atoms* 2015 353 46–55. <https://doi.org/10.1016/j.nimb.2015.04.024>
 27. E. Delage, Q.T. Pham, M. Karamitros, H. Payno, V. Stepan, S. Incerti, L. Maigne, Y. Perrot 2015 PDB4DNA: implementation of DNA geometry from the Protein Data Bank (PDB) description for Geant4-DNA Monte-Carlo simulations *Computer Physics Communication* 192 282-288. <https://doi.org/10.1016/j.cpc.2015.02.026>
 28. B. Viillard, Y. Perrot, Z. Boudhraa, E. Jouberton, E. Miot-Noirault, M. Bonnet, S. Besse, F. Mishellany, A. Cayre, L. Maigne, L. Rbah-Vidal, M. D'Incan, F. Cachin, J-M Chezal, F. Degoul, December 2015 [¹²³I]ICF01012 melanoma imaging and [¹³¹I]ICF01012 dosimetry allow adapted internal targeted radiotherapy in preclinical melanoma models, *European Journal of Dermatology* 25 (1) 29-35. [10.1684/ejd.2014.2481](https://doi.org/10.1684/ejd.2014.2481)

29. S. Incerti, M. Psaltakis, P. Gilletta, Ph. Barbereta, M. Bardiès, M.A. Bernal, M.-C. Bordage, V. Breton, M. Davidkovag, E. Delage, Z. El Bitar, Z. Francis, S. Guatelli, A. Ivanchenko, V. Ivanchenko, I. M. Karamitros, S.B. Lee, L. Maigne, S. Meylan, K. Murakami, P. Nieminen, H. Payno, Y. Perrot, I. Petrovic, Q.T. Pham, A. Ristic-Fira, G. Santin, T. Sasaki, H. Seznec, J.I. Shin, V. Stepan, H.N. Tran, C. Villagrasa, The Geant4-DNA Collaboration, 15 August 2014 Simulating radial dose of ion tracks in liquid water simulated with Geant4-DNA: A comparative study *NIM B: Beam Interactions with Materials and Atoms* **333** 92-98. <https://doi.org/10.1016/j.nimb.2014.04.025>
30. D. Sarrut, M. Bardies, N. Boussion, N. Freud, S. Jan, J-M. Létang, G. Loudos, L. Maigne, S. Marcatili, T. Mauxion, P. Papadimitroulas, U. Pietrzyk, C. Robert, D R. Schaart, D. Visvikis, I. Buvat, June 2014 An analysis of the potential of GATE for radiation therapy and dosimetry applications *Med. Phys.* **41** (6) 064301/14 <https://doi.org/10.1118/1.4871617>
31. Y. Perrot, F. Degoul, P. Auzeloux, M. Bonnet, F. Cachin, J.M. Chezal, D. Donnarieix, P. Labarre, N. Moins, J. Papon, L. Rbah-Vidal, A. Vidal, E. Miot-Noirault and L. Maigne 2014 Internal dosimetry through GATE simulations of preclinical radiotherapy using melanin-targeting ligand *Phys. Med. Biol.* **59** 2183-2198. <https://doi.org/10.1088/0031-9155/59/9/2183>
32. V. Breton, C. Champion, Z. El Bitar, M. Karamitros, S. B. Lee, L. Maigne, Y. Perrot, Q. T. Pham, J. I. Shin, H. N. Tran and S. Incerti 2013 Extending Geant4 at the physics-medicine-biology frontier, *Trends in Computational Science and Engineering* **3** 21-41.
33. F. Degoul, M. Borel, N. Jacquemot, S. Besse, Y. Communal, F. Mishellany, J. Papon, F. Penault-Llorca, D. Donnarieix, M. Doly, L. Maigne, E. Miot-Noirault, A. Cayre, J. Cluzel, N. Moins, J-M Chezal, M. Bonnet 2013 In vivo efficacy of melanoma internal radionuclide therapy with a ¹³¹I-labelled melanin-targeting heteroarylcarboxamide molecule *Int J Cancer* 2013 **133** (5) 1042–1053. <https://doi.org/10.1002/ijc.28103>
34. S Jan, D Benoit, E Becheva, T Carlier, F Cassol, P Descourt, T Frisson, L Grevillot, L Guigues, L Maigne, C Morel, Y Perrot, N Rehfeld, D Sarrut, D R Schaart, S Stute, U Pietrzyk, D Visvikis, N Zahra, I Buvat 2011 GATE V6: a major enhancement of the GATE simulation platform enabling modelling of CT and radiotherapy *Phys. Med. Biol.* **56** 881-901. <https://doi.org/10.1088/0031-9155/56/4/001> (2016 PMB Prize for the Highest cited paper)
35. L Maigne, Y Perrot, D R Schaart, D Donnarieix, V Breton 2011 Comparison of GATE/GEANT4 with EGSnrc and MCNP for electron dose calculations at energies between 15 keV and 20 MeV 2011 *Phys. Med. Biol.* **56** 811-827. <https://doi.org/10.1088/0031-9155/56/3/017>
36. C. Quantin, G. Coatrieux, F. A. Allaert, M. Fassa, K. Bourquard, J-Y. Boire, P. De Vlieger, L. Maigne, Vincent Breton 2009 New advanced technologies to provide decentralised and secure access to medical records: case studies in Oncology *Cancer Informatics* **7** 217–229. [PMID:19718446](https://pubmed.ncbi.nlm.nih.gov/19718446/)
37. V. Breton, A. Da Costa, P. De Vlieger, Y-M Kim, L. Maigne, R. Reuillon, D. Sarramia, T. N. Hai, H. Q. Nguyen, D. Kim, Y.-T. Wu 2009 Innovative in silico approaches to address avian flu using grid technology *Innovative in silico approaches to address avian flu using grid technology, Infectious Disorders – Drug Targets* **9** (3) 358-365. <https://doi.org/10.2174/1871526510909030358>
38. C. Thiam, V. Breton, D. Donnarieix, B. Habib and L. Maigne 2008 Validation of dose deposited by low energy photons using GATE/GEANT4 2008 *Phys. Med. Biol.* **53** 3039-3055. <https://doi.org/10.1088/0031-9155/53/11/019>
39. C.O. Thiam, L. Maigne, B. Habib, D. Donnarieix, J. Arnold, V. Breton 2007 Simulation Monte Carlo des dépôts de doses en radiothérapie et curiethérapie et déploiement sur grille de calcul *Radioprotection* **42** 43-64. <https://doi.org/10.1051/radiopro:2006025>

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Parallelization of Monte Carlo Simulations and Submission to a Grid Environment 2004
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41. S. Jan, G. Santin, D. Strul, S. Staelens, K. Assié, D. Autret, S. Avner, R. Barbier, M. Bardiès,
P.M. Bloomfield, D. Brasse, V. Breton, P. Bruyndonckx, I. Buvat, A.F. Chatziioannou, Y. Choi,
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S. Kerhoas-Cavata, A.S. Kirov, V. Kohli, M. Koole, M. Krieger, D.J. van der Laan, F. Lamare, G.
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Simon, T.Y. Song, J.-M. Vieira, D. Visvikis, R. van de Walle, E. Wieërs, and C. Morel 2004
GATE: a simulation toolkit for PET and SPECT *Phys. Med. Biol.* **49** 4543-4561. **PMID:**
15552416 (2009 PMB Prize for the Highest cited paper)
42. J. Montagnat, F. Bellet, H. Benoit-Cattin, V. Breton, L. Brunie, H. Duque, Y. Legré, I.E. Magnin,
L. Maigne, S. Miguët, J.-M. Pierson, L. Seitz, T. Tweed 2004 Medical images simulations,
storage, and processing, on the European DataGrid testbed *Journal of Grid Computing* **2**
387-400.
43. D. Lazaro, I. Buvat, G. Loudos, D. Strul, G. Santin, N. Giokaris, D. Donnarieix, L. Maigne, V.
Spanoudaki, S. Styliaris, S. Staelens and V. Breton 2004 Monte Carlo simulation of a CsI(Tl)
gamma camera dedicated to small animal imaging using GATE *Phys. Med. Biol.* **49** 271-285.