Nicolas Deparis | Research engineer

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github.com/NicolasDeparis • DOB 24/05/1986 - 33 years old

Research interests

- Galaxy formation and evolution
- Cosmology - Reionization
- Star formation and feedback
- High performance computing
- Data visualization

Experience

Fixed-term contract **2018-Present**
Scientific software developer *Observatoire Astronomique de Strasbourg/CNRS*
Devellopping the SVOM MXT Scientific pipeline using microservice architecture

Fixed-term contract **2014**
6 months *Observatoire Astronomique de Strasbourg/CNRS*
Implementing stellar formation in a RHD cosmological code

Education

Ph.D. in Astrophysics **2014–2017**
Thesis title : Numerical study of the reionization with the simulation code EMMA *Strasbourg University*
Supervisor: Dominique Aubert

Master in Theoretical Physics **2009–2011**
Specialization : Astrophysics *Strasbourg University*

Licence "Science de la Terre de l'Univers et de l'Environnement" **2008–2009**
Specialization : Géophysics *Louis Pasteur University*

Diplôme Universitaire de Technologie "Mesures Physiques" **2005–2007**
Specialization : Techniques Instrumentales *Paul Verlaine University*

Prize

Atos - Joseph Fourier: Laureate in High Performance Computing - 06/2019

Schools

12/2019: Gitlab CI & Gitflow - M2I formation, France

11/2018: IV ASTERICS VO School - Observatoire de Strasbourg, France

11/2016: Parallel computing by David Brusson - Ecole Supérieure du professorat et de l'éducation, Strasbourg - France

06/2016: Gutenberg School on Astrophysics - Stars and Galaxy Formation - Observatoire de Strasbourg, France

05/2016: Galaxy formation and evolution in a cosmological context by Andrea Cattaneo - Institut d'Astrophysique

de Paris, France

01/2016: From BioImage Processing to BioImage Informatics - Télécom Physique Strasbourg France

12/2015: Principle of imaging for membrane systems - Institut Charles Sadron, Cronenbourg, Strasbourg, France

03/2015: Numerical Simulations in Astrophysics - Observatoire de Strasbourg, France

Computing skills

Languages: Python, C/C++, Fortran, Java

Libraries: MPI,CUDA,OpenMP,HDF5,OpenGL

Tools: Git, docker, Valgrind

Known HPC centers: PRACE TGCC Curie (France), PRACE CINES Occigen (France), OLCF Titan (USA)

Conferences

06/2016: Illuminating the Dark Ages: Quasars and Galaxies in the Reionization Epoch - MPIA Summer Conference 2016- Heidelberg, Germany

06/2016: Presentation at Journées de la SF2A - Lyon, France

04/2016: Presentation at 13th Potsdam/AIP Thinkshop "Near Field Cosmology" - Obergurgl, Tyrol, Austria

10/2015: Presentation at meeting ORAGE - Roscoff, France

05/2015: Poster at The Olympian Symposium 2015 Cosmology and the Epoch of Reionization - Paralia Katerini's, Mount Olympus, Greece

05/2015: CLUES meeting 2015 - Copenhague, Danemark

Publications

N. Deparis, D. Aubert, P. Ocvirk, J. Chardin, and J. Lewis, "Impact of the reduced speed of light approximation on ionization front velocities in cosmological simulations of the epoch of reionization," *Astronomy and Astrophysics*, vol. 622, p. A142, Feb. 2019.

J. Chardin, G. Uhlrich, D. Aubert, **N. Deparis**, N. Gillet, P. Ocvirk, and J. Lewis, "A deep learning model to emulate simulations of cosmic reionization," *Monthly Notices of the Royal Astronomical Society*, vol. 490, pp. 1055–1065, Nov 2019.

D. Aubert, **N. Deparis**, and P. Ocvirk, "EMMA: an adaptive mesh refinement cosmological simulation code with radiative transfer," *Monthly Notices of the Royal Astronomical Society*, vol. 454, pp. 1012–1037, Nov. 2015.

P. Ocvirk, D. Aubert, J. G. Sorce, P. R. Shapiro, **N. Deparis**, T. Dawoodbhoy, J. Lewis, R. Teyssier, G. Yepes, S. Gottlöber, K. Ahn, I. T. Iliev, and Y. Hoffman, "Cosmic Dawn II (CoDa II): a new radiation-hydrodynamics simulation of the self-consistent coupling of galaxy formation and reionization," *arXiv e-prints*, Nov. 2018.

D. Aubert, **N. Deparis**, P. Ocvirk, P. R. Shapiro, I. T. Iliev, G. Yepes, S. Gottlöber, Y. Hoffman, and R. Teyssier, "The Inhomogeneous Reionization Times of Present-day Galaxies," *Astrophysical Journal, Letters*, vol. 856, p. L22, Apr. 2018.

P. Ocvirk, D. Aubert, **N. Deparis**, and J. Lewis, "The impact of the reduced speed of light approximation on the post-overlap neutral hydrogen fraction in numerical simulations of the epoch of reionization," *arXiv e-prints*, Mar. 2018.

Submitted

N. Deparis, D. Aubert, P. Ocvirk, and N. Gillet, "Radiation and supernovae feedback during the epoch of reionization with emma," *Monthly Notices of the Royal Astronomical Society*, Submitted.

Proceedings

N. Deparis, D. Aubert, and P. Ocvirk, "Stellar feedback during the reionization with EMMA," in *SF2A-2016: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics* (C. Reylé, J. Richard, L. Cambrésy, M. Deleuil, E. Pécontal, L. Tresse, and I. Vauglin, eds.), pp. 399–402, Dec. 2016.

A. Schaaff, **N. Deparis**, N. Gillet, P. Ocvirk, A. Steinmetz, P. Lespingal, and N. Buecher, "3D-Visualization of Astronomical Data in a Web Browser," in *Astronomical Data Analysis Software and Systems XXV* (N. P. F. Lorente, K. Shortridge, and R. Wayth, eds.), vol. 512 of *Astronomical Society of the Pacific Conference Series*, p. 503, Dec. 2017.

A. Schaaff, J. Berthier, J. Da Rocha, **N. Deparis**, S. Derriere, P. Gaultier, R. Houpin, J. Normand, and P. Ocvirk, "Immersive 3D Visualization of Astronomical Data," in *Astronomical Data Analysis Software an Systems XXIV (ADASS XXIV)* (A. R. Taylor and E. Rosolowsky, eds.), vol. 495 of *Astronomical Society of the Pacific Conference Series*, p. 125, Sept. 2015.

References

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