Press release

Atos and GENCI announce winners of Atos Joseph Fourier Award 2019

Paris, France, July 3, 2019 – Atos, a global leader in digital transformation, today announces, together with GENCI (Grand Équipement National de Calcul Intensif), the winners of its scientific competition, the Atos Joseph Fourier Award 2019. The award aims to accelerate research and innovation by rewarding projects in the fields of numerical simulation and Artificial Intelligence (AI).

The ceremony presided over by Sophie Proust, Group CTO at Atos, and Philippe Lavocat, GENCI CEO, unfolded in the presence of representatives of the French scientific community, researchers, engineers, and entrepreneurs.

The jury, which was made up of independent industry figures from the French scientific and industrial sectors, awarded the following winning teams:

Numerical simulation

- **1st prize (10 000 €)**: Professor Elie Hachem and his team at Mines ParisTech (Paris School of Mines), for his work on parallel anisotropic meshing and immersed methods for high fidelity computational mechanics. These modelling tools are 100 - 1,000 times more accurate than those currently available for modeling materials. They provide an in-depth understanding of the behavior of the material and also enable new physical phenomena to be discovered. These modelling tools are already used on the most powerful supercomputers on the planet, as well as by more than 500 manufacturers in aeronautics and other sectors, to accelerate design-industrialization cycles.
- **2nd prize (200,000 hours of machine time on a GENCI supercomputer)** honored Dominique Aubert and his team from Strasbourg University, CNRS and Scuola Normale Superiore in Italy for GARLHYC (GAlaxies and Reionization simuLations using HYbrid Computing). This software is optimized to make it possible, with current HPC means, to simulate the first billion years of the universe, and in particular, the formation of the first massive objects such as galaxies. It is already being used on a very large scale on some of the most powerful supercomputers that exist today.

Artificial Intelligence (AI)

- **1st prize (10 000 €)** awarded to Pierre Yves Oudeyer, Research Director at INRIA Bordeaux, for his project on Deep Curiosity-driven Autonomous Machine Learning. These algorithms study the foundation of human curiosity, in order to enable generic AI self-learning. They can be applied to a vast number of areas, including teaching and learning methods, Industry 4.0 and robotics, and more generally, future distributed and cooperative Artificial Intelligence.
- **GENCI Special Prize (50,000 GPU hours of machine time on an AI-specialized GENCI supercomputer)** honored Filippo Vicentini and Alberto Biella, from Paris Diderot University, who have developed an algorithm which creates a link between AI and quantum physics, increasing the simulation capabilities of future generations of computers.

Sophie Proust, **Group CTO at Atos,** said: *"It's really exciting to see such high-quality projects in the fields of HPC and AI and I'd like to congratulate all the scientists and researchers for their hard work and innovative ideas. At Atos we're proud to be supporting innovations that will lead to tangible industrial applications."*

Philippe Lavocat, CEO of GENCI added, "GENCI *is very pleased, for the tenth year, to be associated with the Joseph Fourier Prize which promotes scientific excellence and its impact on society. As a member of the jury, the entries are again this year of a very high scientific quality, in both HPC and AI categories. Through this award GENCI wishes to offer French researchers access to its best supercomputers, including the new extension of Atos' supercomputer, named Joliot-Curie, at the TGCC (the CEA's Very Large Computing Centre), which will be increased to more than 20 petaflops in 2020."*

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About GENCI

GENCI, National Equipment Intensive Computing, is a civil society owned 49% by the State, represented by the Ministry of Higher Education of Research and Innovation (MESRI), 20% by the CEA, 20 % by the CNRS, 10% by the Universities and 1% by Inria. Born from the political desire to place France at the best European and international level in the field of intensive computing, with the weight of the association of main actors of the academic research and the support of the public authorities, GENCI pursues three great missions since its creation in 2007: to finance and coordinate the implementation of a strategic plan of equipment of national centers of computation intensive for the civil research; to be a major player in the organization and the realization of a European space for intensive computing for research (as such, GENCI represents France within PRACE); to promote simulation and intensive computing in basic and industrial research. For more information: http://www.genci.fr/en

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