In memoriam - Dimitri Komatitsch (1970-2019)

After obtaining in 1993 a diploma of Engineer from Telecom ParisTech (ENST) together with a Master's degree in Electronics from Université Pierre-et-Marie Curie, Dimitri Komatitsch joined the Institut de Physique du Globe de Paris (IPGP), and more particularly Albert Tarantola's group focused on geophysical tomography. As part of his PhD thesis defended in 1997, he developed the spectral-element method and its application to seismology issues, under the supervision of Jean-Pierre Vilotte.

After a post-doctoral fellowship at the Department of Earth and Planetary Sciences at Harvard University in Cambridge (USA), where he started collaborating with Jeroen Tromp, he moved with him in 2000 to the Department of Geological and Planetary Sciences at Caltech (California Institute of Technology) in Pasadena (USA). He became there a senior research fellow in scientific computing and geophysics. The SPECFEM codes (2D and 3D versions), world-widely used for seismic and acoustic imaging in the academic and industrial fields, are the results of this fruitful collaboration.

In 2004 Dimitri went back to France and got a Professor position at University of Pau at the Laboratory of Modeling and Imaging in Geosciences of which he was the Director from 2007 to 2010. In 2011 he became successively a Professor at University of Toulouse (France) at the Laboratory of Geosciences and Environment, and then a Research Director at CNRS at the Laboratory of Mechanics and Acoustics (LMA) in Marseille Dimitri has continued there his extensive work at the interface of applied mathematics, geophysics and numerical simulation/High Performance Computing (HPC) on adjoint/inverse imaging problems based on acoustic waves. He has also collaborated with a large number of high-level scientists, always with great motivation and enthusiasm, on seismology-related topics, on GPU computing for seismic wave propagation and on optimization of high-order finite-element codes on SMP machines. With colleagues at LMA he could extend with enthusiasm and curiosity his research to various non-geophysical applications, such as underwater acoustics, non-destructive testing, and medical (ultrasonic) imaging.

Dimitri was a member of Institut Universitaire de France (IUF) from 2007 to 2012. He was also a member of the Scientific Steering Committee of PRACE, the European Research Infrastructure for the HPC. He has received numerous awards including the Gordon Bell Super Computing Award in 2003, the Atos-Bull Award in 2010, the 3rd Bull Joseph Fourier Award in 2009, the Simone and Cino del Duca Foundation/IUF/Académie des Sciences Award in 2013 for his work on numerical simulation of wave field propagation on new high-performance computing architectures. He was a member of the American Geophysical Union (AGU), of the Society of Exploration Geophysicists (SEG) and of the French Acoustical Society (SFA). He has served the SEG as an Associate Editor for the journal Geophysics.

There is unanimous agreement that Dimitri's work has paved the way of computational seismology towards HPC, which has opened up a whole new branch in the careers of young geophysicists.