

Okazaki Conference

The 75th Okazaki Conference

Tensor Network States: Algorithms and Applications 2016

(January 11–14, 2016)

Organizers: T. Nishino (*Kobe Univ.*), G. Vidal (*Perimeter Inst. Theor. Phys., Canada*), Y.-J. Kao (*Natl. Taiwan Univ., Taiwan*), T. Xiang (*IPCAS, China*), C. Hotta (*Univ. Tokyo*), T. Hikihara (*Gumma Univ.*), K. Okunishi (*Niigata Univ.*), S. Todo (*Univ. Tokyo*) and Y. Shikano (*IMS*)

Invited Speakers: T. Yanai (*IMS*), N. Nakatani (*Hokkaido Univ.*), G. Chan (*Princeton Univ., U.S.A.*), A. Sandvik (*Boston Univ., U.S.A.*), G. Vidal (*Perimeter Inst. Theor. Phys., Canada*), Y.-J. Kao (*Natl. Taiwan Univ., Taiwan*), T. Xiang (*IPCAS, China*), T. Okubo (*Univ. Tokyo*), F. Pollmann (*MPIPKS, Germany*), Y. Ran (*Boston Col., U.S.A.*), H. Imai (*Univ. Tokyo*), D. Poilblanc (*CNRS and Univ. Toulouse, France*), M. C. Banuls (*MPQ, Germany*), S. Yang (*Perimeter Inst. Theor. Phys., Canada*)

Tensor networks are recognized as one of the most promising numerical tools to study quantum many body systems; representatives are the matrix product state (MPS), the multi-scale entanglement renormalization ansatz (MERA), and the projected entangled-pair states (PEPS), and Density Matrix Renormalization Group (DMRG). By now, the concept covers various fields including material science, quantum chemistry, and lattice gauge theories, and it is desired to share ideas among these fields.

This workshop focused on the recent developments on tensor network based algorithms and applications. It hosted the discussion of current problems and developments among the leading researchers, aiming to promote interactions between selected fields from statistical mechanics to condensed matter, from quantum chemistry to nano-technology and high energy physics.

