

HKMS Awards of 2017

The HKMS Young Scholar Award and the Best Thesis Award were presented in AGM of HKMS 2017 held in Hong Kong University of Science and Technology.

The 2017 HKMS Young Scholar Award was awarded to Eric Chung of Chinese University of Hong Kong, Xianpeng Hu of City University of Hong Kong and Ben Kane of Hong Kong University on the basis of a recommendation by a selection committee consisting of Ngai-Ming Mok of Hong Kong University, Chi-Wang Shu of Brown University, Zhouping Xin of Chinese University of Hong Kong and Shou-Wu Zhang of Princeton University.

The text that follows contains the committee's citation for each award.

Eric Chung is cited for his significant contributions to numerical analysis and scientific computing, in particular to discontinuous Galerkin (DG) methods and to multiscale modeling and computation. For DG methods, he initiated the study of a special class of staggered DG schemes for wave equations such as Maxwell equations which have a few attractive properties including energy conservation and optimal rate of convergence. For multiscale modeling and computation, he has developed an adaptive generalized multiscale finite element method which can more effectively solve multiscale problems without scale separation assumption.

Xianpeng Hu is cited for his substantial contributions to the theoretical analysis of some very important governing systems arising from continuum mechanics. In particular, he successfully obtained the Hausdorff dimension of reduced energy defect measure for the weak solutions to the multi-dimensional compressible Navier-Stokes systems in the class of P. L. Lions. His works on the global existence of classical solutions to the repulsive elastodynamics and weak solutions to the incompressible viscoelasticity are also deep and far reaching both in theory and from the practical perspective.

Ben Kane is cited for his fundamental contributions to number theory, especially on the theory of meromorphic modular forms and polar harmonic modular forms. As two of many beautiful applications of his joint work with Kathrin Bringmann, the authors proved a Ramanujan type formula for the Fourier coefficients of any meromorphic modular form of negative weight, and gave an explicit construction of meromorphic modular forms of weight 0 as sums of polar harmonic forms.

The 2017 HKMS Best Thesis Award was awarded to Yalong Cao for his thesis "Gauge theory and calibrated geometry for Calabi-Yau 4 folds" and Chang Liu for his thesis "Unified gas-kinetic scheme for the study of multi-scale flows" on the basis of a recommendation by a selection committee consisting of Weiping Li (HKUST), Zhouping Xin (CUHK) and Jun Zou (CUHK).

Yalong Cao obtained his Ph. D in 2016 from Chinese University of Hong Kong under the supervision of Naichung Conan Leung, Chang Liu obtained his Ph. D in 2016 from Hong Kong University of Science and Technology under the supervision of Kun Xu.