

MATH-IMS Joint Colloquium Series The Chinese University of Hong Kong

This MATH-IMS Joint Colloquium Series in pure mathematics is organized by the Department of Mathematics and the Institute of Mathematical Sciences (IMS) at the Chinese University of Hong Kong. The series focus on all areas of pure mathematics together with theoretical developments and applications.

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Time: 4pm – 5pm (Hong Kong Time)

Zoom Link: <https://cuhk.zoom.us/j/98846779826>

Rabinowitz minimal periodic solution conjecture

Speaker: Professor Yiming Long

Chern Institute of Mathematics, Nankai University

Abstract: In 1978, Professor Paul Rabinowitz proved the existence of T -periodic solutions for autonomous Hamiltonian systems whose Hamiltonian function is super-quadratic at infinity and zero for any given $T > 0$ by using a minimax variational method. Because the minimal period of this solution could be T/k for some positive integer k , he asked whether such a system possesses always a T -periodic solution with T as its minimal period. This is the famous Rabinowitz minimal periodic solution conjecture. In the last more than 40 years, many mathematicians have studied this conjecture and got many interesting results. But the conjecture is still open under the original conditions of Rabinowitz. In this lecture, I shall give a brief survey on the main results obtained and methods used in these studies so far, and hope to lead to more interests on this conjecture.

Bio: Prof. Yiming Long obtained his Ph.D. degree from University of Wisconsin in 1987. He held a postdoc position at ETH before moving to Nankai University, where he is now a professor at the Chern Institute of Mathematics. He is a member of the Chinese Academy of Sciences; and the World Academy of Sciences (TWAS), an fellow of Amer. Math. Soc., and was an invited speaker at ICM-2002. He received numerous awards including the Shiing-Shen Chern Award and the Hua Loo-Keng Prize by the Chinese Math. Soc.; the First Class Prize of the Award for Sci. and Tech. Progress by the Ministry of Education of China; the Second Class Prize of the National Award for Natural Sciences by the State Council of China, the TWAS Award in Math., and the HLHL Prize of Sci. and Tech. Progress. He is on the editorial boards of the Acta Math. Sinica, Chinese Ann. of Math., Advanced Nonlinear Studies, etc. He served as the Dean of School of Math. at Nankai Univ.; the President of Tianjin Math. Soc.; the Vice President of Chinese Math. Soc.; the Director of the Chern Institute of Math. of Nankai Univ., Vice Chairman of the Tianjin Asso. of Science and Technology, and a member of the Executive Committee of International Math. Union.