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

This 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 focuses on all areas of pure mathematics together with theoretical developments and applications.

Date: November 10, 2023 (Friday)
Time: 3:00PM-4:00PM (Hong Kong Time)
Venue: LSB LT5

Minimal surfaces in Riemannian geometry

Speaker: Professor Richard Schoen
University of California, Irvine

Abstract: The behavior of geodesics on Riemannian manifolds provides much of the information that we have about the geometric and topological structure of manifolds in terms of their curvature. It is natural that different and complementary information might be obtained from the study of minimal submanifolds which are higher dimensional generalizations of geodesics. Minimal hypersurfaces are central to the study of positive scalar curvature and higher codimension minimal surfaces have also found deep applications to geometric questions. This talk will give a survey of some of these results and their methods of proof.

Bio: Professor Schoen is a world leading mathematician in the area of differential geometry, partial differential equations and general relativity. After receiving his PhD in 1977 from Stanford University, under the supervision of Prof. Shing-Tung Yau and Prof. Leon Simon, Prof. Schoen has held positions at the Courant Institute, UC Berkeley, UC San Diego, Stanford University and he is currently Distinguished Professor and Excellence in Teaching Chair at UC Irvine. Prof. Schoen's research has influenced the major development of geometric analysis in the past few decades, and has been invited to speak at the International Congress of Mathematicians (ICM) three times (including twice as Plenary Speaker). Prof. Schoen has received numerous top awards in recognition of his profound contributions, including for example, MacArthur Fellowship (1983), Bochner Prize (1989), Guggenheim Fellowship (1996), Heinz Hopf Prize (2017), and Wolf Prize (2017) etc. Prof. Schoen was elected to the American Academy of Arts and Sciences in 1988 and to the National Academy of Sciences in 1991. Apart from his research contributions, Prof. Schoen has also mentored over 44 doctoral students, many of whom are now holding academic positions in major universities around the world.

(Part of International Conference on Geometric Analysis and Mathematical Physics: MISTY)