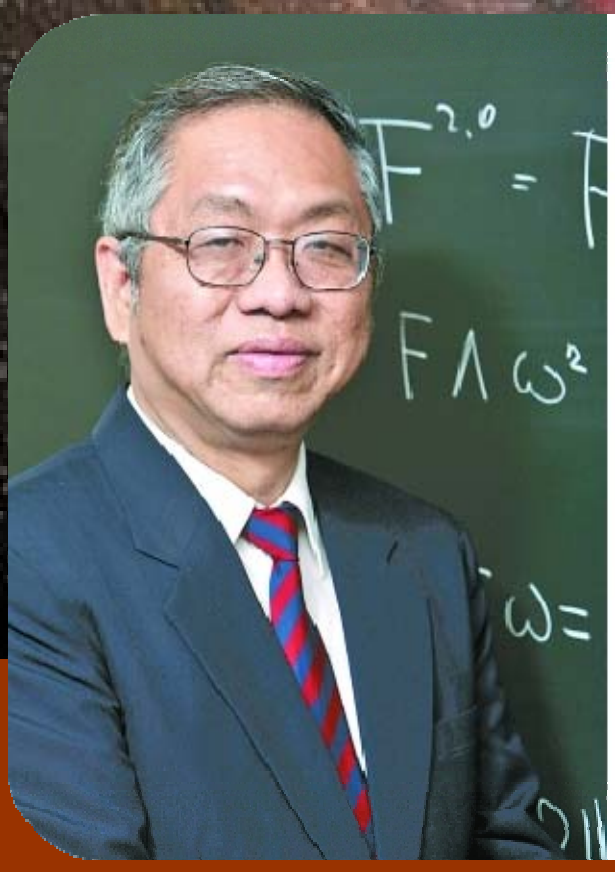
IMS Public Lecture



THE SHAPE OF INNER SPACE

Speaker: Professor Shing-Tung Yau
Harvard University

Date: Tuesday, 4 January 2011

Time: 6:00 pm - 7:00 pm

Venue: LT31, Block S16
Level 3, Faculty of Science
National University of Singapore

Free Admission

About the Speaker

Professor Shing-Tung Yau studied at the Chinese University of Hong Kong and received his PhD from the University of California at Berkeley under the great geometer Professor Shiing-Shen Chern. Professor Yau is William Casper Graustein Professor of Mathematics at Harvard University. He has made fundamental contributions to mathematics, particularly differential geometry, and is well known for solving a number of important conjectures such as the Calabi Conjecture and the positive mass conjecture. The Calabi-Yau manifolds, named after him and Calabi, has now become a cornerstone of mathematics and theoretical physics. In Professor Yau's 40-year career in mathematics, he has received numerous awards and honours, including the Fields Medal in 1982, the Veblen Prize in Geometry in 1981, the MacArthur Fellowship in 1985, the Crafoord Prize in 1994, and the US National Medal of Science 1997. He received the Wolf Prize in 2010 in recognition of 'his work in geometric analysis that has had a profound and dramatic impact on many areas of geometry and physics'.

Abstract

I would like to talk about how mathematics and physics can come together to the benefit of both fields, particularly in the case of Calabi-Yau spaces and string theory. This, not coincidentally , is the subject of my new book with Steve Nadis. The book is called THE SHAPE OF INNER SPACE. The book tells the story of those spaces. It also tells some of my own story and a bit of the history of geometry as well. In that spirit, I'm going to back up and talk my personal introduction to geometry and the evolution of the ideas that are discussed in this book.

I wanted to write this book to give people a sense of how mathematicians think and approach the world. I also want people to realize that mathematics does not have to be a wholly abstract discipline, disconnected from everyday phenomena, but is instead crucial to our understanding of the physical world.

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