

HKIAS Distinguished Lecture Series

On some new mathematical models and their applications

Professor Pierre-Louis Lions
Collège de France, Fields Medallist-1994



Date: 19 April 2024 (Friday)

Time: 4:30pm-5:30pm (Light refreshment will be served from 4:00pm-4:30pm)

Venue: HKIAS Lecture Theatre, LG/F, Academic Exchange Building
City University of Hong Kong

Abstract We begin with some historical remarks on the intrinsic connections between Mathematical Modeling and the development of Mathematics. In particular, the branch of Mathematics known as Analysis has grown considerably and clearly shows how applications lead to new mathematical theories which in turn allow to consider new applications... We shall present two recent examples that illustrate this phenomenon, namely the theory of Mean Field Games and the study of systems governed by large random matrices.

Biography Professor Pierre-Louis Lions is one of the most prominent experts, worldwide, of the theory of nonlinear partial differential equations. He is a Professor at the prestigious Collège de France in Paris, where he holds the Chair of "Partial Differential Equations and Applications" since 1992.

He has made profound and lasting contributions to the mathematical analysis of the Boltzmann equation, the compressible Navier-Stokes equations, the Hamilton-Jacobi equations, the Hartree-Fock equation, image processing, viscosity solutions, concentration compactness, mean field games, and stochastic partial differential equations.

He is Commandeur in the National Order of the Legion of Honor in France. He is a member of the French Academy of Sciences, of the Accademia dei Lincei, of the Academies of Sciences of Argentina, Chile, and Brazil, of the Academia Europaea, of the Istituto Lombardo, of the Accademia di Napoli, of the French Academy of Technologies, of the World Academy of Sciences (TWAS), and of the Royal Academy of Belgium.

Professor Lions has received numerous awards, including the prestigious Fields Medal in 1994, the Grand Prize Ampère from the French Academy of Sciences, the Grand Prize from the INRIA, France, the IBM Prize, and the Philip Morris Prize. He is "Doctor Honoris Causa" at Heriot-Watt University, at City University of Hong Kong, at the Ecole Polytechnique Fédérale de Lausanne, at Bucharest University, and at Narvik University. He is listed as an ISI highly cited researcher.

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