北京理工大学
数学与统计学院学术报告

Geometric mechanics and its applications

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摘要：

In this series of lectures, we study recent advances of Geometric Mechanics and its applications. We start with a brief introduction to the fundamentals of geometric mechanics, i.e., variational principles as well as symplectic and Poisson structures. Then, we study the notion of Dirac structures and its applications in physics. In particular, we illustrate the theory of Dirac dynamical systems with examples such as circuits, nonholonomic systems as well as nonequilibrium thermodynamic systems.

个人简介：

Dr. Hiroaki Yoshimura is Professor of Department of Applied Mechanics and Aerospace Engineering and Department of Mathematics and Applied Mathematics at Waseda University. He received his PhD in 1995 from Waseda University. He joined Waseda University as Assistant Professor in 1992, Associate professor in 1997 and he became Professor in 2003. He was appointed as a visiting faculty at Dynamical Systems and Control in Division of Applied Science and Engineering, sponsored by Professor Jerrold E. Marsden at California Institute of Technology during 2002-2003. His studies have been focused on nonlinear science such as geometric mechanics, dynamical systems and numerical analysis. He has published more than 100 relevant academic papers, including more than 50 papers included in SCI. His main results have been published in internationally renowned academic journals such as Philosophical Transaction of the Royal Society A, Nonlinearity, International Journal of Multiphase Flow, and European Journal of Applied Mathematics. He received the Kurata Foundation Research Fellowship, Kawakami Memorial Foundation Research Fellowship, and ASME FEDSM 2021 Flow Visualization Competition Award.