

第 2 1 4 回 広島数理解析セミナー (2 0 1 7 年度)

Hiroshima Mathematical Analysis Seminar No.214

日時 : 6月23日(金) 15:00 ~ 17:30

場所 : 広島大学理学部 B707

今回は2件の講演です.

15:00 ~ 16:00

講師 : 寺本 有花 氏 (九州大学)

題目 : Bifurcation of Taylor vortex for compressible Navier-Stokes equations

要旨 : In this talk I will discuss the Couette-Taylor problem. We consider a flow between two concentric cylinders whose inner cylinder is rotating with uniform speed and the outer one is at rest. If the rotating speed is sufficiently small, the Couette flow (laminar flow) is stable. When the rotating speed increases, beyond a certain value of the rotating speed, a vortex flow pattern (Taylor vortex) appears. The Couette-Taylor problem has been studied for viscous incompressible fluids and the occurrence of the Taylor vortex was shown to solve a bifurcation problem for the incompressible Navier-Stokes equations. In this talk, we will consider this problem for viscous compressible fluids and show the bifurcation of the compressible Taylor vortex when the Mach number is sufficiently small. This talk is based on a joint work with Prof. Yoshiyuki Kagei (Kyushu University) and Prof. Takaaki Nishida (Kyoto University).

16 : 30 ~ 17 : 30

講師 : Jan Brezina 氏 (東京工業大学)

題目 : On inviscid limit for Euler system with non-local interactions

要旨 : The collective behavior of animals can be modeled by a system of equations of continuum mechanics endowed with extra terms describing repulsive and attractive forces between the individuals. This system can be viewed as a generalization of the compressible Euler equations with all of its unpleasant consequences, e.g., the non-uniqueness of solutions. In this talk, we analyze the equations describing a viscous approximation of a generalized compressible Euler system and we show that its dissipative measure-valued solutions tend to a strong solution of the Euler system as viscosity tends to 0, provided that the strong solution exists.

広島数理解析セミナー幹事

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