Partial Differential Equations Seminar

Title Existence of non-radial stationary solutions to the 2D incompressible Euler equation

Speaker 박재민 박사

Affiliation The university of Basel, Swiss

Date Jan. 5th , 2:00 ~ 3:00 pm

Location Science Building #262

Abstract: In this talk, we study stationary solutions to the 2D incompressible Euler equations in the whole plane. It is well-known that any radial vorticity is stationary. For compactly supported vorticity, it is more difficult to see whether a stationary solution has to be radial. In the case where the vorticity is non-negative, it has been shown that any stationary solution has be radial. By allowing the vorticity to change the sign, we prove that there exist non-radial stationary patch-type solutions. We construct patch-type solutions whose kinetic energy is infinite or finite. For the finite energy case, it turns out that a construction of a stationary solution with compactly supported velocity is possible. This is based on the joint work with Javier Gomez-Serrano and Jia Shi.

연세대학교 수학계산학부

주최: 4단계 BK21 수리과학 및 계산교육 연구단

FOUR BK21 함께하는 공정한 BK! 성장하는 내연구 OK!