

JSPS A3 Foresight Program hosted AIMR Mathematical Science Group
Special Lecture co-organized by MathAM-OIL

25 July 2019
at AIMR Main Building

Lecture 1: 10:00–12:00
Spatially localized structures and homoclinic snaking

Examples of localized structures in the physical sciences
Model problem: Swift–Hohenberg equation in one and two dimensions
Snakes and ladders structure of the pinning region
Moving localized structures and their collisions
Homoclinic snaking in other systems: Turing structures and Faraday waves
Fronts between different wavetrains

Lecture 2: 14:00–16:00
Buoyancy-driven flows in double-diffusive systems

Convectons in double diffusive convection
Collisions of convectons
Traveling pulses (Kolodner, Nishiura, Spina, Bergeon)
Conserved systems: rotating convection, magnetoconvection
Fingering convection