幾何構造と微分方程式
― 対称性・特異点・力学系の視点から ―

Geometric Structures and Differential Equations
– Symmetry, Singularity, and Dynamical Systems –

Dates: From 17/December/2024 till 20/December/2024
Venue: Kyoto University, Research Institute for Mathematical Sciences, Room 111.
Organizers: Daisuke Tarama   (Ritsumeikan University, main)
        Kenro Furutani   (Osaka Metropolitan University / Tokyo University of Science)
        Hiroaki Yoshimura (Waseda University)
Contact: Daisuke Tarama (`dtarama [at] fc.ritsumei.ac.jp`)

Tuesday, 17/December/2024

13:20 – 13:30 Opening

13:30 – 14:20 Elmar Schrohe (Leibniz University Hannover)
The plasmonic eigenvalue problem, the Calderón projector and the Dirichlet-to-Neumann operator on manifolds with fibered cusp singularities

14:40 – 15:30 Takaharu Yaguchi (Kobe University)
On a posteriori estimates of physics-informed neural networks for solving partial differential equations

15:40 – 16:30 Linyu Peng (Keio University)
The construction of invariant variational integrators via moving frames

Wednesday, 18/December/2024

9:45 – 10:35 Goo Ishikawa (Hokkaido University)
Prolongations of distributions from a viewpoint of sub-Riemannian geometry

11:00 – 11:50 Irina Markina (University of Bergen)
Local invariants and geometry of the sub-Laplacian on H-type foliations

13:45 – 14:35 Sonja Hohloch (University of Antwerp)
On the affine invariant of hypersemitoric systems

14:50 – 15:40 Jérémie Pierard de Maujouy (University of Tours)
The statistical manifold approach to thermodynamics

16:00 – 16:50 Veronique Fischer (University of Bath)
High frequency analysis in sub-Riemannian geometry (online)

Thursday, 19/December/2024

9:45 – 10:35 Yoshio Uwano (Kyoto Pharmaceutical University)
The phase space description of the geodesics on the quantum statistical manifold

11:00 – 11:50 Chisato Iwasaki (University of Hyogo)
Symbolic calculus of pseudo-differential operators on manifolds with conical singularities

13:30 – 14:20 Junya Takahashi (Tohoku University)
Comparison of the eigenvalues of the Hodge-Laplacian and special holonomy groups

14:40 – 15:30 François Gay-Balmaz (Nanyang Technological University)
Geometry and numerics of Navier-Stokes-Fourier fluids (online)

15:40 – 16:30 Kenro Furutani (Osaka Metropolitan University / Tokyo University of Sciences)
Lagrangian submanifold satisfying Maslov's quantization condition

Friday, 20/December/2024

9:45 – 10:35 Genki Ishikawa (Ritsumeikan University)
Stability analysis for the pseudo-Riemannian geodesic flows of step-two nilpotent Lie groups

11:00 – 11:50 Tudor S. Ratiu (Shanghai Jiao Tong University)
The Teichmüller space obtained by reduction

11:50 – 12:00 Closing