

Last update: December 1, 2022

## **International Workshop on Multiphase Flows: Analysis, Modelling and Numerics**

Dates: December 5-9, 2022

Venue: Waseda University (Dec. 5-7, 9), RIHGA Royal Hotel Tokyo (Dec. 8)

### **Timetable**

#### **December 5 (Mon.)**

10:10 – 10:20    Opening

10:20 – 11:10    Giovanni P. Galdi (University of Pittsburgh)

“Mathematical Analysis of Flow-Induced Oscillations of a Spring-Mounted Body in a Navier-Stokes Liquid”

11:10 – 11:30    Coffee Break

11:30 – 12:20    Toshiaki Hishida (Nagoya University)

“Stability of time-dependent motions for fluid-rigid ball interaction”

12:20 – 14:00    Lunch

14:00 – 14:50    Yasushi Taniuchi (Shinshu University)

“On uniqueness of mild  $L^{3,\infty}$ -solutions on the whole time axis to the Navier-Stokes equations in unbounded domains”

15:00 – 15:50    Shinya Nishibata (Tokyo Institute of Technology)

“Asymptotic stability of spherically symmetric stationary solutions for the compressible Navier-Stokes equation”

15:50 – 16:10    Coffee Break

16:10 – 17:00    Priyanjana M. N. Dharmawardane (Wayamba University of Sri Lanka)

“Global existence of solutions for the systems of thermoviscoelasticity”

Last update: December 1, 2022

**Birkhäuser Distinguished Lecture on Mathematical Fluid Mechanics**

17:30– 18:30 Yoshihiro Shibata (Waseda University)

“The  $L_p$ – $L_q$  maximal regularity and free boundary problem for the Navier-Stokes equations”

**December 6 (Tue.)**

9:40 – 10:30 Matthias Hieber (TU Darmstadt)

“Interaction of Deterministic and Stochastic Forces with the Anisotropic Navier-Stokes and Primitive Equations”

10:30 – 10:50 Coffee Break

10:50 – 11:40 Gieri Simonett (Vanderbilt University)

“Fluid flow on surfaces”

11:50 – 12:40 Thomas Eiter (Weierstrass Institute for Applied Analysis and Stochastics)

“Existence of time-periodic flows in domains with oscillating boundaries”

12:40 – 14:00 Lunch

14:00 – 14:50 Kenta Oishi (Waseda University)

“On the global well-posedness and decay of a free boundary problem of the Navier–Stokes equation in two-dimensional half space”

15:00 – 15:50 Hirokazu Saito (The University of Electro-Communications)

“On decay properties of the Stokes semigroup for two-phase flows”

15:50 – 16:10 Coffee Break

16:10 – 16:40 Jumpei Inoue (Waseda University)

“Maximize the ratio of biomass to resources in a class of diffusive logistic equations”

Last update: December 1, 2022

16:50 – 17:20 Tadashi Udagawa (Waseda University)

“Global solutions of the sinh-Gordon equation and the Iwasawa factorization for loop groups”

17:30 – 18:00 Taiki Takeuchi (Waseda University)

“Inviscid limits for the Keller-Segel-Navier-Stokes system of parabolic-elliptic type”

### **December 7 (Wed.)**

9:40 – 10:30 Takayuki Kubo (Ochanomizu University)

“Existence of weak solution to the nonstationary Navier-Stokes equations approximated by pressure stabilization method”

10:30 – 10:50 Coffee Break

10:50 – 11:40 Ryo Takada (The University of Tokyo)

“Global solutions for the incompressible rotating MHD equations in the scaling critical Sobolev space”

11:50 – 12:40 Ryosuke Nakasato (Waseda University)

“On the asymptotic stability for the quantum Hall-MHD via  $\widehat{L}^p$  energy methods”

12:40 – 14:00 Lunch

14:00 – 14:50 Mitsuo Higaki (Kobe University)

“Planar Navier-Stokes flows with flux in exterior domains”

15:00 – 15:50 Keiichi Watanabe (Waseda University)

“Large time behavior of solutions to the Navier-Stokes equations in exterior Lipschitz domains”

15:50 – 16:10 Coffee Break

Last update: December 1, 2022

16:10 – 17:00 Matthias Köhne (Heinrich-Heine-Universität Düsseldorf)  
“Contact Line Dynamics I - Modeling and Regularity of Solutions”

17:30 – 18:30 Jürgen Saal (Heinrich-Heine-Universität Düsseldorf)  
“Contact Line Dynamics II - Maximal Regularity in the Weak Setting”

### **December 8 (Thu.)**

9:30 – 10:20 Xin Zhang (Tongji University)  
“Classical solution for the compressible flow with free surface in three dimensional exterior domain”

10:30 – 11:20 Paolo Maremonti (Università degli Studi della Campania “Luigi Vanvitelli”)  
“Existence of solutions to the Navier-Stokes Cauchy problem in the  $L^3$  setting”

11:20 – 11:35 Coffee Break

11:35 – 12:25 Takayuki Kobayashi (Osaka University)  
“Global well-posedness of the compressible Navier-Stokes-Korteweg system under critical condition”

12:25 – 13:45 Lunch

13:45 – 14:35 Shuichi Kawashima (Waseda University)  
“Dissipative structure for the system in electro-magneto-hydrodynamics”

14:45 – 15:35 Reinhard Racke (University of Konstanz)  
“Stability of relaxed multi-d compressible Navier-Stokes equations”

15:35 – 15:50 Coffee Break

15:50 – 16:40 Takayoshi Ogawa (Tohoku University)  
“Free surface problem of the incompressible Navier-Stokes equations in a scaling critical space”

Last update: December 1, 2022

**December 9 (Fri.)**

9:40 – 10:30 Tohru Ozawa (Waseda University)

“Method of Modified Energy”

10:30 – 10:50 Coffee Break

10:50 – 11:40 Tsukasa Iwabuchi (Tohoku University)

“A localized maximum principle and an application to the critical SQG on bounded domain”

11:50 – 12:40 Vladimir Georgiev (University of Pisa)

“A new class of small initial data which may shift the lifespan estimates for the classical damped wave equations”

12:40 – 12:50 Closing

Organized by

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