Mini-Symposium on
Stochastic Geometric Mechanics

Date: **Thursday, October 28th, 2021, 16:30-19:00**

Venu: Zoom meeting.

Registration through the URL below before October 27th, Wednesday, is **mandatory**. Before the mini-symposium, the link to the Zoom meeting will be sent to registered participants.

`https://ritsumei-ac-jp.zoom.us/meeting/register/tJEud-6sqj4jH9ZeZXELLTsdDS2c-puKR5aL`

Programme:

time (JST=UTC+9)	
16:30-17:30	Tudor S. Ratiu
17:30-17:45	break
17:45-18:45	Ana Bela Cruzeiro
18:45-19:00	discussion

1st talk

- speaker: Tudor S. Ratiu (Shanghai Jiao Tong University)

- Title: A stochastic variational principle for the compressible Navier-Stokes equation

- Abstract:
  A stochastic Euler-Poincaré variational principle for dissipative equations will be presented. As example, the compressible Navier-Stokes equations will be derived from this variational principle.

2nd talk

- speaker: Ana Bela Cruzeiro (Instituto Superior Técnico, University of Lisbon)

- Title: The Schrödinger problem in space-time domains

- Abstract:
  We present a pair of adjoint optimal control problems characterising a class of time-symmetric stochastic processes defined on random time intervals. The associated PDEs are of free-boundary type.

  The particularity of our approach is that it involves two adjoint optimal stopping times adapted to a pair of filtrations, the traditional increasing one and another, decreasing. They are the keys of the time symmetry of the construction, which can be regarded as a generalisation of "Schrödinger's problem" (1931-32) to space-time domains.

  This is joint work with C. Oliveira and J.-C. Zambrini (Univ. Lisbon)

Organizer: Daisuke Tarama (Department of Mathematical Sciences, Ritsumeikan University, e-mail: `dtarama` [at] `fc.ritsumei.ac.jp`)

Mini-Symposium on
Stochastic Geometric Mechanics

日時：**2021 年 10 月 28 日（木）16:30-19:00**
実施方法： Zoom ミーティングによる開催.
10 月 27 日（水）までに下記 URL からの**事前登録してください**. 当日昼頃 Zoom ミーティング
の情報が届きます.
https://ritsumei-ac-jp.zoom.us/meeting/register/tJEud-6sqj4jH9ZeZXELLTsdDS2c-puKR5aL
プログラム：

時間（日本時間）	
16:30-17:30	Tudor S. Ratiu
17:30-17:45	break
17:45-18:45	Ana Bela Cruzeiro
18:45-19:00	discussion

講演 1

- speaker: Tudor S. Ratiu (Shanghai Jiao Tong University)

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- Abstract:
  A stochastic Euler-Poincaré variational principle for dissipative equations will be presented. As example, the compressible Navier-Stokes equations will be derived from this variational principle.

講演 2

- speaker: Ana Bela Cruzeiro (Instituto Superior Técnico, University of Lisbon)

- Title: The Schrödinger problem in space-time domains

- Abstract:
  We present a pair of adjoint optimal control problems characterising a class of time-symmetric stochastic processes defined on random time intervals. The associated PDEs are of free-boundary type.

  The particularity of our approach is that it involves two adjoint optimal stopping times adapted to a pair of filtrations, the traditional increasing one and another, decreasing. They are the keys of the time symmetry of the construction, which can be regarded as a generalisation of "Schrödinger's problem" (1931-32) to space-time domains.

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