

## **Stochastic Non-smooth Analysis for Energy Harvesting: Progress and Planning 2022**

Location: University of Southampton, Tizard Building, Room 4079  
(Building 13, University Rd, Highfield, Southampton SO17 1BJ)

### **Day 1: Monday: June 13 (all times UK times)**

**THEME:** Talks will review recent results, connect to VI-EH models, and will include a few slides with initial ideas for next steps and connections with other areas or data. These connections and next steps will be further developed in Day 2.

10:30-11:00: Arrivals and coffee

#### **11:00-13:15: Recent nonlinear computational and modeling in VI-EH**

**11:00-11:30: Daniil Yurchenko** (*University of Southampton*):

Tentative topic: Opening overview

**11:30-12:10: Dimitri Costa** (*University of Aberdeen*):

Tentative topic: Comparison of soft and hard impact models in VI-EH

**12:20 – 13:00: Larissa Serdukova** (*University of Reading*):

Tentative topic: Bifurcation structure in impact pairs for VI-EH

13:15-14:15: Lunch break

#### **14:15-15:30: Advances in related computational methods**

**14:15-14:55: Lanjing Bao** (*Georgia State University*):

Tentative: Computational methods for maps and Lyapunov function in non-smooth systems

**15:00-15:40: Henrik Sykora** (*Heriot-Watt University*):

Tentative: New Stochastic PI methods

15:45-16:00: Coffee break

#### **16:00-17:00: Connections to data and related areas**

**16:00-16:40: Igor Belykh** (*Georgia State University*):

Tentative: Connections to Bridge dynamics and data

**16:40-17:10: Henrik Sykora** (*Heriot-Watt University*):

Tentative: Data collection for properties of polymer membranes

**Day 2: Tuesday: June 14 (all times UK times)**

**THEME: Informal ideas generating next research directions, connections to other projects and data**

9:00-9:30: Arrivals and coffee

**9:30-12:30: First round: next directions and new projects**

**9:30-10:00: Rachel Kuske (Georgia Tech):**

Tentative: What about Stochastics?

**10:00-11:15: Round robin (5-10 minute informal talks from previous day's speakers):**

Possible projects in stochastics and related topics

**11:15- 12:30: Breakout groups:**

Further brainstorm on possible topics for next steps, also topics for impromptu background/references to note, ideas to bring to the whole group in the afternoon

12:30-13:30 Lunch and discussion of afternoon session format

**13:30- 14:15: Introduction of incoming postdocs (virtual):**

**Christina Athanasouli; Darlington David; Rahul Kumar:**

each give 5-10 summary of previous work – methods and applications

**14:00— 15:30: Moderated group identification of next projects:**

What are some priority directions; What relevant results already exist; What are gaps that need to be filled; What are relevant references; What are connections across on-going projects?

Moderator/Scribe collects the ideas, group iterates through discussion to clarify ideas and plans, who is interested in which project(s)

15:30-15:45 Coffee and finalizing project ideas

**15:45- 16:30 Impromptu background topics to discuss, key references, data sources, etc.**

**16:30-17:00: Wrap-up and planning**