



CONFERENCE - Statistics and Mathematical Modelling in Combination

16-18 November 2022

La Trobe University – City Campus and online (streamed via Zoom)
Level 2, 360 Collins Street Melbourne, Victoria, Australia

Deterministic modellers and statisticians have a lot to be gained by working as a team in which both types of approaches are used. The combination of statistics and classical dynamics has long been a fertile field, tracing back to statistical mechanics from the end of the 19th century and stochastic differential equations from the 1920s. The need to combine the two modelling approaches has never been greater and neither has the opportunity for affordable high-performance computation. During the COVID-19 pandemic, agreement has been found between agent-based models and differential compartment equations in modelling infection numbers. Each approach gives confidence to the other, and this suggests scope for new hybrid models.

Other relevant areas include:

- Model identification from a set of output data
- Inverse problems to determine transport coefficients from noisy data
- Evolution equations with uncertain model parameters
- Transport in random media
- PDE for financial derivatives based on fluctuating stocks
- Stationary distributions of ergodic dynamical systems
- Boltzmann equation based on statistical dynamics
- Transport in fractal media
- Complex systems in ecology and economics
- Probabilistic interpretation of deterministic Schroedinger equation

Confirmed speakers:

- Professor Hugh Possingham FAA (QLD Chief Scientist)
- Professor Michael Stumpf (University of Melbourne)
- Professor Jukka Corander (University of Helsinki)
- Professor Andrea Bertozzi (University of California) – presenting online
- Dr Iadine Chades (CSIRO)
- Professor Malay Bannerjee (IIT Kanpur)
- Professor Shizuo Kaji (Kyushu University)

More information and registration at: https://www.mathematics.org.au/sys/public/home.php?conf_id=57

*This conference will precede the biennial Forum Mathematics for Industry FMfI2022
"Mathematics for Public Health and Sustainability" to be held at the same location 21-24 November 2022.*