

## Special Session Description

Session Title:    **Advances in stochastic processes**  
                  **A special session in honor of Prof. Imre Pázsit's achievements**

Subject Area:    6. General Reactor Analysis Methods and Applications

### Organizer

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### Description

The transport of neutrons in nuclear reactors can be considered as a random process for several reasons. Firstly, the neutron flight path between collisions, the type of reaction on collision, the scattering angle, the number of neutrons in a fission process are all random variables. Secondly, the medium itself in which neutrons are transported might exhibit fluctuations or oscillations of the reactor properties, i.e. displacement of core components, temperature or density variations, etc. The first category is often referred to as zero-power reactor noise, whereas the second category corresponds to power reactor noise.

This session will deal with the theory and application of both zero-power and power reactor noise, with special attention to:

- Neutron noise theory
- Core diagnostics and signal processing techniques
- Reactivity determination in sub-critical systems
- Nuclear safeguards