



NES Colloquium

Wednesday, 24 August 2016, 11:00 - 12:00, OSGA/EG06

The sound of neutrons

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Since the middle of the last century, scientists have been listening to neutrons and one thing is certain: neutrons are noisy!

And this noise is interesting! Indeed, when listened carefully, it can tell us something about the environment in which neutrons are propagated. Typically, it can be used to determine the characteristics of a nuclear power plant, identify smuggled radioactive materials, or make master students loose their hairs in experimental lab class on the CROCUS reactor.

During this talk, I will present some of the historical background of neutron noise measurements – as it is called in the reactor physics field – show how such noise is typically measured, and what we can infer from these measurements. To illustrate the techniques I will show past and present applications at PSI and EPFL. Finally, I will touch upon some future developments of the technique*.

*one of which will require us to listen to the noise of gamma-rays and neutrons simultaneously!