HONGMEI ZHU, York University
Noise Analysis

Noise generally refers to the undesirable part of a signal. However, analyzing noise may reveal hidden information that is useful to monitor operational conditions of a device. For instance, signals routinely acquired from in-core flux detectors in CANDU reactors contain noise, namely, neutron noise. In this talk, we analyze neutron noise using time-frequency techniques. Our findings suggest that neutron noise can measure combined mechanical vibrations from nearby fuel channels. It indicates the potential of using the neutron noise analysis technique to exact vibrating frequencies of fuel channels and to indirectly monitor the operational conditions within a CANDU reactor core.

This is a joint work with Cheng Liu and Andrew C. Wallace, Department of Materials and Major Components, Kinectrics Inc.