

## **Kinetic models for imaging in random media**

Olivier Pinaud, Colorado State University

The motivation for this work is the reconstruction of inclusions in complex media. The fine structure of the medium of propagation is here not available and is thus modeled as random. When the fluctuations are too strong, this precludes the use of standard imaging techniques that are based on the coherent part of the signal. We propose an alternative based on deterministic transport models that describe the propagation of weakly random quadratic quantities in the wavefield. We will present numerical simulations validating the approach and a theoretical analysis on simplified models.