Professor Jacek Wesolowski

Warsaw University of Technology

TITLE: From quadratic harnesses to stationary measure of the Kardar-Parisi-Zhang equation

ABSTRACT: We will show how one can represent the stationary measure of the ASEP (asymmetric simple exclusion process) in terms of quadratic harnesses, which are stochastic processes with quadratic conditional structure of the second order. We will also explain how, in view of this representation, Askey-Wilson processes, which consist a subfamily of quadratic harnesses, can be used to derive the Laplace transform of KPZ stationary measure as a limit of the weak ASEP. Finally, we will identify a stochastic representation of this limit. This talk is based on a joint work with Wlodek Bryc (Univ. of Cincinnati) and others.