



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON PROBABILITY

Large gap asymptotics of the tacnode process

By

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Abstract

The tacnode process is a universal determinantal point process arising from non-intersecting particle systems and tiling problems. It is the aim of this talk to explore the integrable structure and asymptotics for the gap probability of the thinned/unthinned tacnode process over $(-s,s)$. We establish an integral representation of the gap probability in terms of the Hamiltonian associated with a system of differential equations. With the aids of some remarkable differential identities for the Hamiltonian, we also compute large gap asymptotics, up to and including the constant term in the thinned case. As direct applications, we obtain expectation, variance and a central limit theorem for the associated counting function.

Date: 29 January 2024 (Monday)

Time: 4:00pm

Venue: Room 4472 (Lifts 25/26)

All are Welcome!