

DIPARTIMENTO DI SCIENZE MATEMATICHE, FISICHE E INFORMATICHE

SEMINARIO DI ANALISI MATEMATICA - PROBABILITÀ

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Giovedì 22 maggio 2025, ore 15.30

Sala Riunioni e Seminari, Plesso di Matematica

Hydrodynamic limit for a TASEP with space-time discontinuous jump rates

The Totally Asymmetric Simple Exclusion Process is a conservative particle system that has been studied through various mathematical lenses. Results for this particle system include hydrodynamic limits, invariant distributions, fluctuations and large deviations. It has connections to the celebrated KPZ class via a coupling with the corner growth model and last passage percolation; it is considered one of the exactly solvable models of the KPZ class.

In this talk we will discuss a (non-exactly solvable) generalisation of TASEP in which the rates that govern the particle jumps depend on the location of the particle and the time that we are observing the process. The rates come from a background function that can be discontinuous in space and time. We will discuss the hydrodynamic limit of this version of TASEP (for particle current and density), which will be the solution to certain discontinuous PDEs.

Organizzatore: Filippo Cagnetti









PNRR-M4C2- I1.1- AVVISO MUR N.104 DEL 02-02-2022 - PRIN 2022 - SETTORE ERC PE1 - TITOLO: GEOMETRIC EVOLUTION PROBLEMS AND SHAPE OPTIMIZATION (GEPSO) - CODICE PROGETTO 2022E9CF89 - CUP D53D23005820006 - FINANZIATO DALL'UNIONE EUROPEA - NEXTGENERATIONEU