

# Boğaziçi MATH COLLOQUIUM

## Planar Brownian Flows with Rank-Based Characteristics

Mine Çağlar  
Koç University

**Abstract:** Stochastic differential equations (SDEs) that are driven by smooth vector fields give rise to stochastic flows when they have strong solutions. These flows are homeomorphic. On the other hand, stochastic flows with coalescence are possible when the covariance function is not smooth. Such SDEs represent turbulent evolutions defined by flows of probability kernels. In this case, the existence of a strong solution needs to be investigated since the usual conditions are not satisfied by the diffusion terms. Two different equations for which the weak solution is a Brownian motion are considered in this talk. Strong solutions, stochastic flows and coalescence are studied.

**Date :** Wednesday, October 4, 2017

**Time:** 16:00

**Place:** TB 130, Boğaziçi University