

# BERNOULLIS TAFELRUNDE

GRADUATE STUDENT SEMINAR

**19 December 12:15-13:00**

Seminarraum 05.002, Spiegelgasse 5

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## **Fontes-Isopi-Newman processes associated with resistance forms**

### ABSTRACT

Classical Fontes-Isopi-Newman (FIN) diffusions are one dimensional Brownian motions time-changed by a certain type of irregular measure. These processes occur naturally as the scaling limit of randomly trapped random walks on  $\mathbb{Z}$  in the sense of Bouchaud trap models, as well as constant speed random walks amongst heavy-tailed random conductances in one dimension. Taking inspiration from the connection with (random) conductance models I introduce resistance forms and then give a general framework for studying time-changed stochastic processes associated with resistance forms and their discrete approximations. I will give conditions on the discrete approximations that suffice to yield convergence of the associated processes as well as their time-changed counterparts. Lastly I will use this framework to generalise the definition of FIN processes to more general spaces and show that FIN processes still arise as the scaling limit of Bouchaud trap models on discretisations of these more general spaces.