INTERNATIONAL CENTRE *for* THEORETICAL SCIENCES

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ICTS Statistical Physics Journal Club Seminar

Title : Field theories for non-Markovian stochastic processes: Extreme values and beyond

Speaker : Walter Benjamin (SISSA, Italy)

Date : Thursday, 07th October 2021

Time : 03:00 pm (IST)

Abstract : In this talk I will discuss several useful connections between stochastic process and (perturbative) field theory. The talk is organised into three parts:

In the first part, I will motivate the study of the survival probability of one-dimensional non-Markovian processes and its applications to extreme events, as well as present some field-theoretically obtained results concerning their distribution (joint work with G. Pruessner and G. Salbreux). These results are relevant to the study of active matter.

In the second, more technical, part, I will outline how the field-theoretical framework is set up and discuss some mathematical aspects.

In the third part, I will give a (non-technical) overview over various other applications of field-theory to the study of stochastic processes, such as branching processes and fractional Brownian Motion. Hopefully, the talk provides some useful new tools to researchers working on non-Markovian processes, and serves as a basis for a fruitful discussion.

Venue : Please click on the below link to join the seminar

https://us06web.zoom.us/j/89032196526?pwd=NkZ1U2xST1VXejRTWXNWRFJiM3hudz09

Meeting ID: 890 3219 6526

Passcode: 773192

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