Ben-Gurion University of the Negev
Blaustein Institutes for Desert Research
The Swiss Institute for Dryland Environmental and Energy Research
Alexandre Yersin Department of Solar Energy and Environmental Physics

Special Seminar

Direct detection of the origins of anomalous diffusion in experimental time-series

Dr. Erez Aghion
University of Massachusetts

Abstract

"From single molecules to migrating storks".

We study a technique that allows an experimentalist to quantify separately the degree to which an observed anomalous diffusion in a time series occurs due to:

i. non-stationarity (the "Moses effect"), ii. extreme rare events ("Noah effect") or iii. temporal correlations ("Joseph effect").

This decomposition method offers a way to obtain a better understanding about the underlying dynamics of the system,

without making prior assumptions on the model that describes it.

It can also, to some extent, eliminate non-fitting models that one might suggest for this purpose.

We demonstrate the applicability of this approach by analyzing data from several microbiological and ecological experiments.

The hope is to promote its use for more systems in the future, and its further investigation.

IMPORTANT:

Face Mask Mandatory !!!

(Face mask should securely cover the nose, mouth and chin)

Date & Location:

Monday, August 2, 2021, 11:00
Sonnenfeldt Building, lecture room (entry floor)