भारतीय प्रबंध संस्थान बेंगलूर
INDIAN INSTITUTE OF MANAGEMENT BANGALORE

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The Decision Sciences Area at IIM Bangalore welcomes you to a webinar, titled:

'On trend estimation and testing with application to extreme rainfall'

by
Dr. Claudia Neves,
from king's College London

Date: 18th February, 2022
Time: 3:00 p.m. to 4:00 p.m.

Abstract:

Extreme Value Theory provides a rigorous mathematical justification for being able to extrapolate outside the range of the sampled observations. The primary assumption is that the observations are independent and identically distributed. Although the celebrated extreme value theorem still holds under several forms of weak dependence, relaxing the stationarity assumption, for example by considering a trend in extremes, leads to a changeling problem of inference based around the frequency of extreme events. Some studies advocate climate crisis is not so much about startling magnitudes of extreme phenomena but rather how the frequency of extreme events can contribute to the worst case scenarios that could play out on the planet. For instance, the average rainfall may not be changing much, but heavy rainfall may become significantly more or less frequent, meaning that different observations must be endowed with different aspects in their underlying distributions. In this talk, I will present statistical tools for the semi-parametric modelling of the evolution of extreme values over time and/or space by considering a trend on the frequency of exceedances above a high (random) threshold. The methodology is illustrated with an application to daily rainfall data from several gauging stations across Germany and the Netherlands.