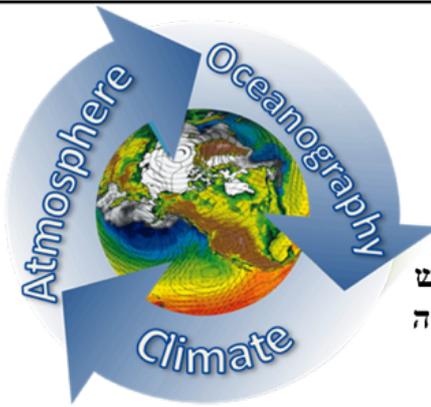


## The Climate, Atmosphere and Ocean Seminar

Fredy and Nadine Herrmann  
Institute of Earth Sciences,  
Hebrew University of  
Jerusalem



הסמינר באקלים,

אטמוספירה

ואוקיאנוגרפיה

המכון למדעי כדור הארץ ע"ש  
פרדי ונדין הרמן, האוניברסיטה  
העברית בירושלים

Thursday Nov.2 | 12:00 | room 102

# Rainfall extremes from remote sensing estimates: using weather radar and satellite rainfall data over the Eastern Mediterranean

*Dr. Francesco Marra, Hebrew University*

Understanding frequency and behavior of extreme rainfall is important to improve our knowledge of the climate and for flood-risk management. Intensity–Duration–Frequency (IDF) curves are tools often used to provide a direct link between the characteristics of a rainfall event and the probability of its occurrence. Derivation of such curves generally relies on historical rain gauge measurements, owing to their long records of precipitation data, and consists in fitting an extreme value distribution to the observed extreme values. However, due to the sparseness of gauge networks worldwide, this raises important issues when distributed information is required or when information for ungauged locations is needed. Remotely sensed rainfall records from weather radars and satellites are recently becoming available, providing high resolution estimates at regional or even global scales but their uncertainty and implications on the identification of extreme rainfall frequency still need to be investigated.

We compare IDF curves from radar and satellite (CMORPH) estimates over Mediterranean, semiarid and arid climates in the Eastern Mediterranean and we quantify the uncertainty related to their limited record length. Good agreement between IDF curves derived from different sensors on Mediterranean and, to a good extent, semiarid climates is observed, whereas uncertainty still dominates the results in arid regions. Analysis of the distributed information obtained from remote sensing data allows to identify features that cannot be captured using rain gauges alone. Our findings demonstrate the usefulness of remote sensing data for improving our understanding of the spatial distribution of extreme rainfall and instill confidence on their quantitative use for flood risk management in ungauged areas of the Earth. Ongoing research aims at exploring the global scale and at decreasing the uncertainty related to the short records of remote sensing data.

הזמנה זו משמשת אישור כניסה לקמפוס גבעת רם בתאריך בו מתקיים הסמינר

Seminar coordinator: Ori Adam, [ori.adam@mail.huji.ac.il](mailto:ori.adam@mail.huji.ac.il)