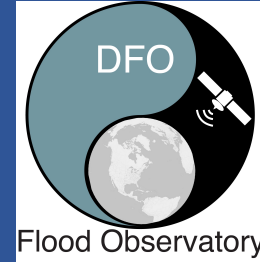


# Remote sensed water discharge to analyze flood frequency

By: Albert Kettner, Robert Brakenridge, Sagy Cohen



## Motivation

- Countries have only few gauging stations and discharge data is hardly shared
- Estimating the flood freq. of a flood event, as it evolves, provides useful information to first responders on flood exposure

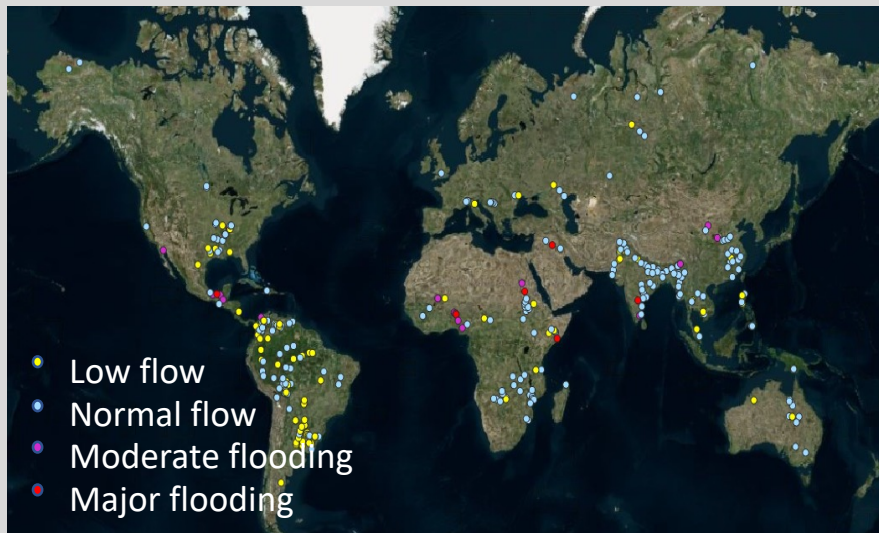
## Data & method

### **Global flood extent (1984 ->)**

- Optical and Synthetic-aperture radar (SAR) from e.g. MODIS / LandSat / Sentinel 1 & 2 & 3

### **Daily water discharge (1998 ->)**

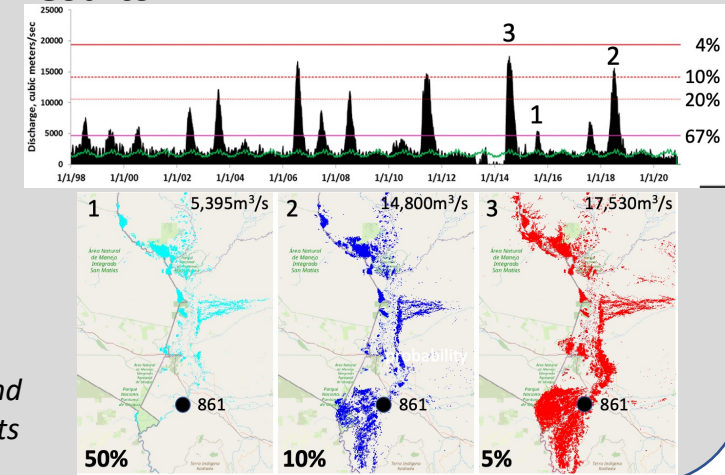
- Satellite microwave sensors, e.g. AMSR-E, AMSR-2, TRMM, and GPM



## Results

Flood extent for different discharge recurrence intervals for a specific location, provides e.g. floodplain managers and planners valuable information of the inundation extent for a given discharge

*Rio Paraguay, Brazil discharge and flood extent for 3 flood events*



## Broader impact

In the immediate moments following a disaster event, humanitarian actors need to make **rapid decisions on how to prioritize affected areas** impacted by the event

<https://floodobservatory.colorado.edu>

