# Global flood risk from advanced modeling and remote sensing in collaboration with Google Earth Engine
Global-scale continuous flood event simulation: when WBM meets LISFLOOD-FP

G. J-P. Schumann *,[1,2,3] , G. R. Brakenridge[3], A. J. Kettner[3], P. D. Bates[2], K. M. Andreadis[4], T. Erickson[5]

[1] Remote Sensing Solutions, Inc. (gjpschumann@gmail.com) , [2] University of Bristol, [3] INSTAAR, CU Boulder, [4] NASA JPL/Caltech, [5] Google, Inc.
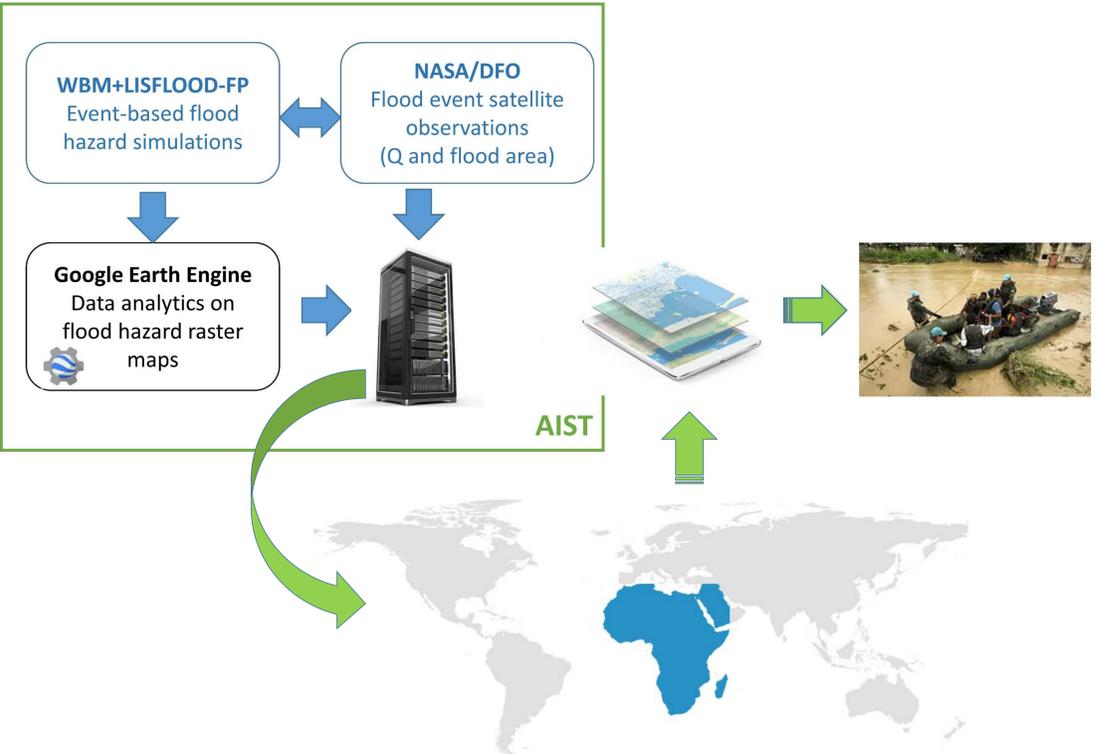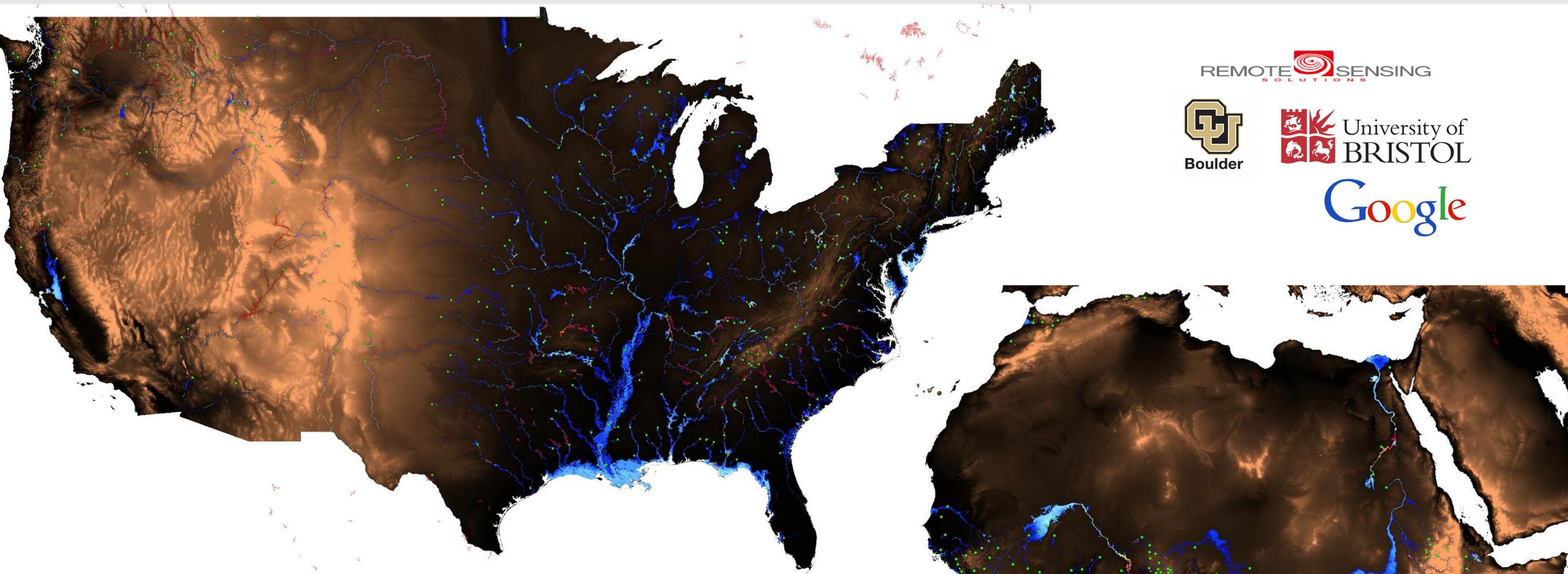
We couple long-term Water Balance Model (WBM) global scale hydrologic flow simulations with the 2-D LISFLOOD-FP model to generate continental-scale flood inundation maps that are then integrated with the flood map information from the DFO, including their radiometry-based satellite discharge estimations ("River Watch"). These remotely sensed discharge stations will be employed to associate flow return periods to the DFO satellite flood maps (up to the 25-year floodplain) that can then be cross-validated with frequencies of inundation from the flood model historic simulations.

Furthermore, we collaborate with Google and use their EE platform for big data analytics, such as downscaling our model simulations of flood hazard to adequate resolutions for decision-makers.