Geophysical Research Abstracts
Vol. 20, EGU2018-10742, 2018
EGU General Assembly 2018


# Field survey of the damage to infrastructures due to the September 2017 Hurricane Maria in Dominica

Mohammad Heidarzadeh (1), Richard Teeuw (2), Simon Day (3), and Carmen Solana (4)

(1) Department of Civil and Environmental Engineering, Brunel University London, London, UK (mohammad.heidarzadeh@brunel.ac.uk), (2) School of Earth and Environmental Sciences, University of Portsmouth, Portsmouth, UK (richard.teeuw@port.ac.uk), (3) Institute for Risk and Disaster Reduction, University College London, London, UK (simon.day@ucl.ac.uk), (4) School of Earth and Environmental Sciences, University of Portsmouth, Portsmouth, UK (carmen.solana@port.ac.uk)

Dominica, a small island located in the Caribbean Sea, was severely hit by Hurricane Maria in September 18, 2017. Hurricane Maria, registered as category five in Saffir-Simpson scale with maximum wind speed of 260 km/h, was the worst natural disaster to hit Dominica, leaving 68 people dead or missing. According to media and official reports, the roofs of 98% of the buildings were damaged and the structural frames of half of the houses were destroyed. Following the event, the electricity was cut and communications were down (apart from a few amateur radio operators). Many bridges were damaged and water supplies were disrupted by erosion and breakage of pipes. In terms of structural engineering, Hurricane Maria's effects on the built environment in Dominica are among the worst-case effects reported worldwide from hurricanes. With the forecasted increase in the intensity of hurricanes, it is expected that we will experience more large magnitude events similar to Maria in the future. Thus, field data on the effects of such extreme events are necessary for the development of building codes; for example, building codes for riverside and coastal construction to resist the effects of extreme climatic events are less developed because such events are rare and the available data is limited. We report the results of a joint UK universities field survey of Dominica in early 2018, in collaboration with local contacts in the island. The purpose of the field survey was to document the geomorphological processes and their interactions, as well as damage to the built environment resulting from those processes in order to investigate damage mechanisms and building fragilities. Survey target areas were selected on the basis of post-hurricane damage mapping, carried out using remotely sensed imagery from aircraft and Earth Observation satellites via volunteer crowdsource 'mapathon' events in the Caribbean and UK. In this presentation, we report the damage to critical infrastructure and discuss various failure modes observed.