Geophysical Research Abstracts
Vol. 19, EGU2017-12587, 2017
EGU General Assembly 2017

Flood simulation and verification with IoT sensors

Che-Hao Chang (1), Chih-Tsung Hsu (2), Shiang-Jen Wu (2), and Sue-Wei Huang (3)

(1) National Taipei University of Technology, Engineering, Civil Engineering, Taipei, Taiwan (fencerc@gmail.com), (2) National Center for High-performance Computing, Hsinchu, Taiwan (hsu_nelson@nchc.narl.org.tw), (3) AnaSystem, Inc., Hsinchu, Taiwan (richard@anasystem.com.tw)

2D flood dynamic simulation is a vivid tool to demonstrate the possible expose area that sustain impact of high rise of water level. Along with progress in high resolution digital terrain model, the simulation results are quite convinced yet not proved to be close to what is really happened. Due to the dynamic and uncertain essence, the expose area usually could not be well defined during a flood event. Recent development in IoT sensors bring a low power and long distance communication which help us to collect real time flood depths. With these time series of flood depths at different locations, we are capable of verifying the simulation results corresponding to the flood event. 16 flood gauges with IoT specification as well as two flood events in Annan district, Tainan city, Taiwan are examined in this study. During the event in 11, June, 2016, 12 flood gauges works well and 8 of them provide observation match to simulation.