

Marc Kjerland



SOUSEI Program for Risk Information
on Climate Change
気候変動リスク情報創生プログラム

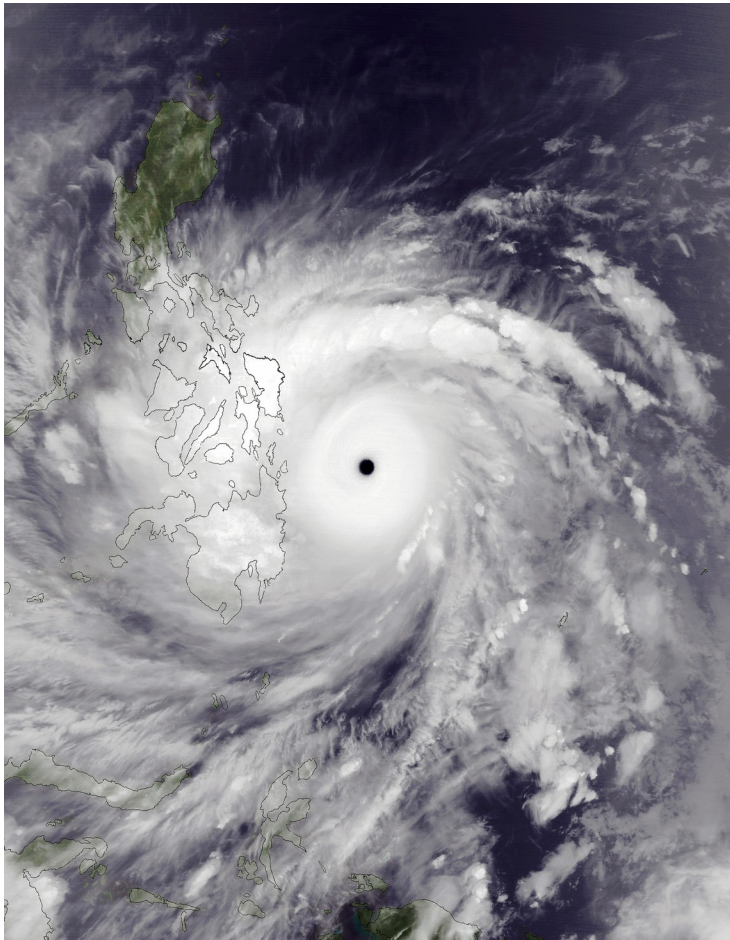


Coastal Hazards Lab
Disaster Prevention Research Institute
Kyoto University

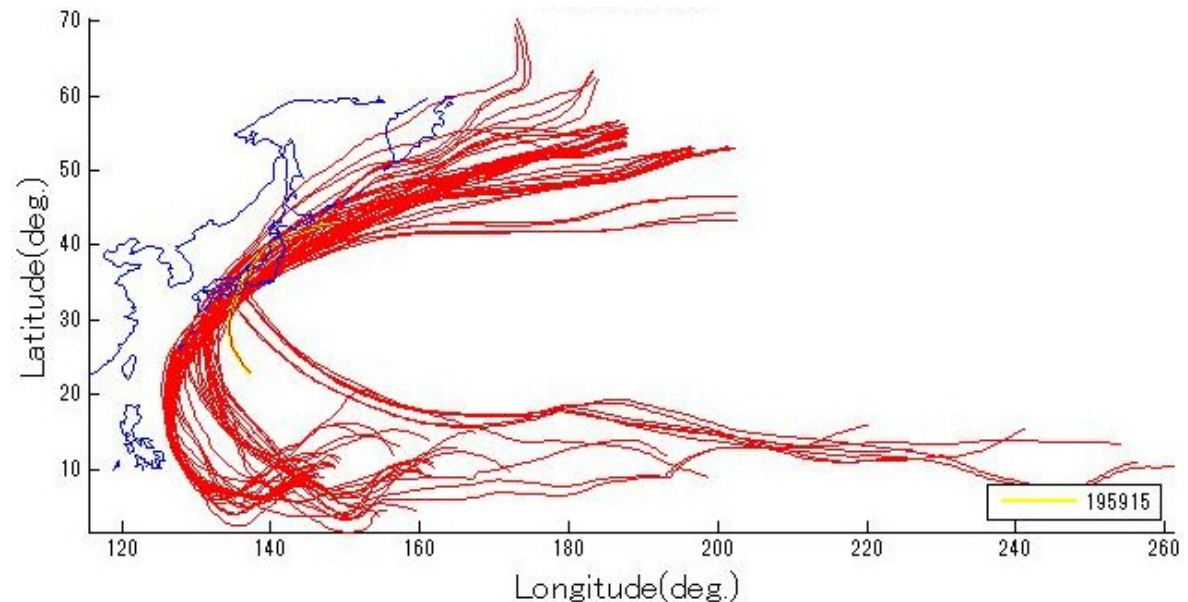
Postdoc advisor: Nobuhito Mori

Motivation

- Hazard assessment of storm surge in future climate
- Distribution of tropical cyclones in NWP will be affected by climate change
- Want to know impact on storm surge distribution



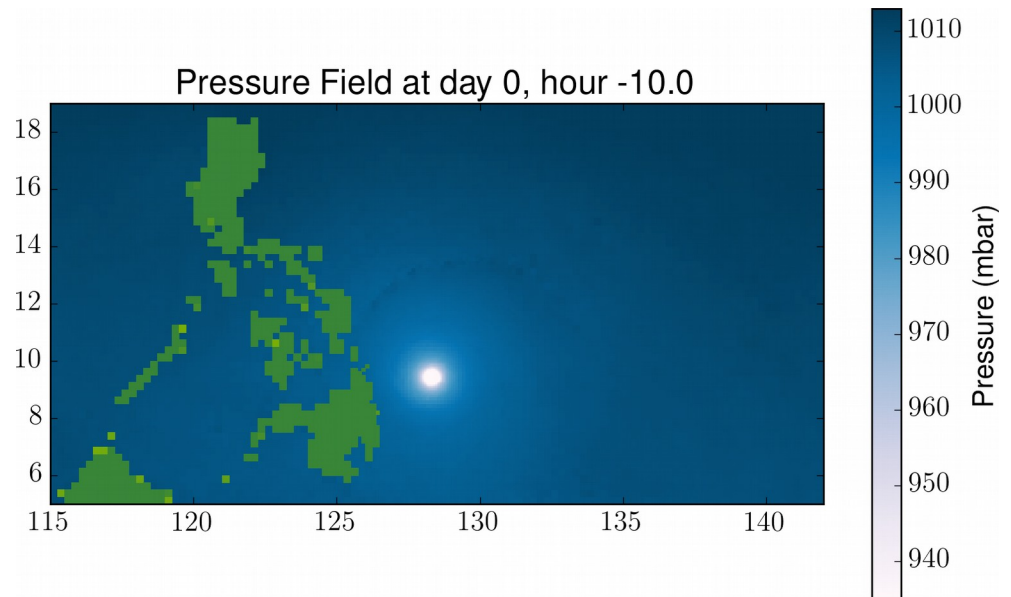
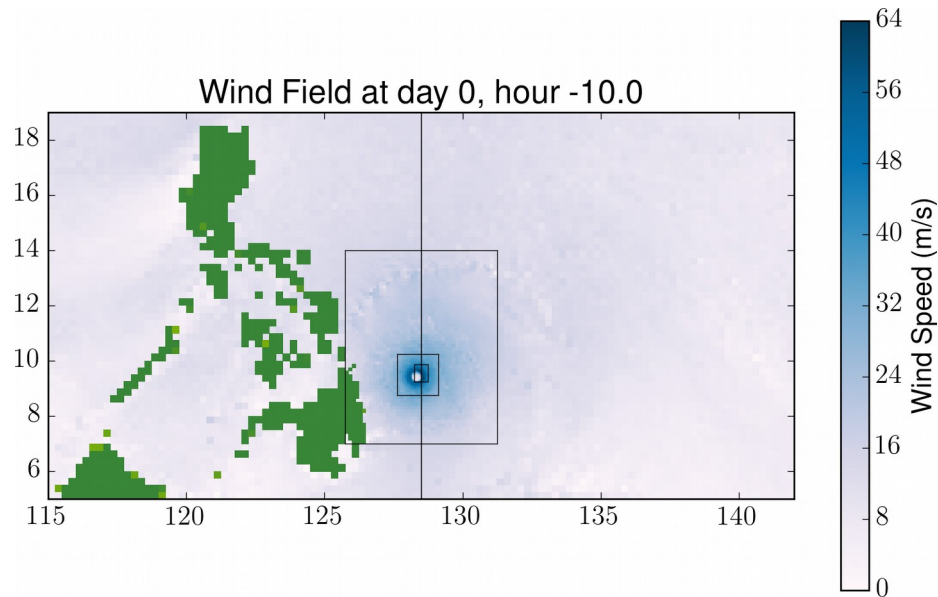
Typhoon Haiyan, 2013



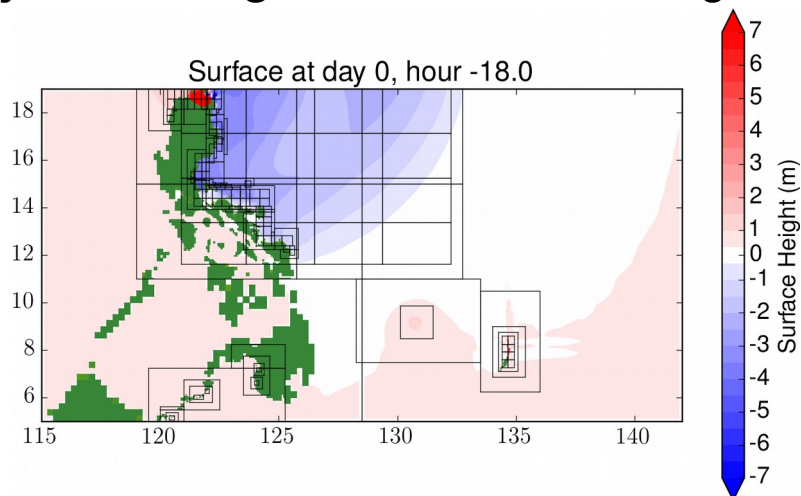
Simulated typhoon tracks, Mori & Takemi 2015

GeoClaw functionality

- Added support for storm fields from regional model output (WRF)
- TODO: add support for NetCDF storm data
- Inter-frame interpolation currently works for unimodal pressure data (one storm)
- TODO? Add more robust interpolation / motion estimation

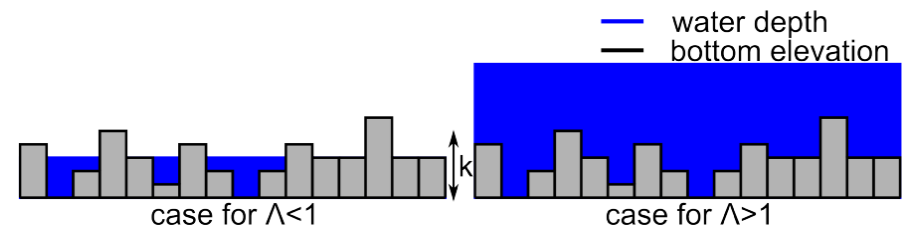


Major challenge: instabilities leading to blowup



Other desired functionality:

- Spatial variation of Manning's n coefficient
- Alternative bottom friction laws



Özgen, et al. Env. Earth Sci. (2015)