Sookyung Kim
Supported Projects: ESGF, CASC postdoc

Quarterly Report for Oct 1, 2017 – Dec 30, 2017

Quarter Accomplishments:

- **Machine Learning**
  - Develop labeled dataset for tracking Tropical Cyclone using CAM5 data and TECA
  - Develop deep learning model of Tropical Cyclone Tracking using LSTM and CNN with Samira Ebrahimi from Microsoft Research for the project collaborated with NERSC LBNL
  - Train, test and verify finished tracking model and confirmed the proposed model perform well to track single tropical cyclone given initial position of trajectory
  - Started material informatics project (LDRD) for 25% of CASC post-doc time
- **List of Accepted Publication**
  - Mayur Mudionda, Sookyung Kim, Ankur Mahesh, Samira Kahou, Karthik Kashinath, Dean Williams, Vincent Michalski, Travis O'Brien, Mr Prabhat "Segmentation and Tracking Extreme Climate Events using Neural Networks" DLPS in NIPS 2017
- **Conference Attendance**
  - Nov 18 – 21, 2017: DMESS in ICDM 2017
  - Dec 4 - 8, 2017: ESGF Face to Face conference 2017
  - Dec 8, 2017: Deep Learning for Physical Science in NIPS 2017
  - Dec 11-15, 2017: AGU 2017

Next Quarter's Roadmap

- Extend proposed tracking model to build the multi-tasking framework to detect initial position, track the trajectory and initiate new tracking model when there comes new tropical cyclone.
- Targeting to full paper publication for KDD 2018 (Deadline is February. 2018)
- Keep working on collaborated project with NERSC LBNL