**Ji-Woo Lee**
**Supported Projects: PCMDI, ESGF, CASC postdoc**

**Quarterly Report for July 1, 2016 – September 30, 2016**

**Quarter Accomplishments:**
- **PMP**
  - Implemented climate variability modes diagnostics to PMP
  - Developed new EOF analysis approach for climate variability modes using projection of observation
  - Analyzed 5 modes of variability obtained from about 200 CMIP5 simulations (all available models and ensemble members)
  - Developed interactive statistics plots and web-like database navigation viewer
- **UV-CDAT**
  - Released UV-CDAT scientific examples and developed advanced examples to be released (e.g. multi-model mean, difference fields between models or observation, EOF analysis, etc.)
  - Contributed to CDP white paper
- **External collaboration**
  - Hosting a visitor for collaborating development of hydrological modeling component in global climate model (GCM)
  - Build collaboration with NOAA/NWS regarding research on future efficient flight path in climate change
- **Publications:**
  - **Peer-reviewed conference proceeding (1):**
    - C Christensen, S Liu, G Scorzelli, **JW Lee**, PT Bremer, V Pascucci, 2016: Embedded Domain-Specific Language and Runtime System for Progressive Spatiotemporal Data Analysis and Visualization, IEEE Symposium on Large Data Analysis and Visualization (LDAV)
  - **Conference abstracts (8):**
    - <u>**Lee, J,**</u> Y. Xue, F. De Sales, I. Diallo, L. Marx, R. Yang, J. Kinter, D. N. Williams, 2016: Impact of interactive A/O feedback on Multi-decadal Variability of East Asian and West African Summer Monsoon in the CFSv2 Simulation. *The American Geophysical Union (AGU) Fall Meeting,* San Francisco, USA, 12-16 December
    - Xue, Y, Y. Liu, P. M. Cox, F. De Sales, **J. Lee,** M. D. Hartman, W. J. Parton and B. Qiu, 2016: Modeling biophysical/biogeochemical/ecological/ocean/atmosphere two way interactions using SSiB4/TRIFFID/DAYCENT: challenge and promising. *The American Geophysical Union (AGU) Fall Meeting,* San Francisco, USA, 12-16 December

- Wang, Y., Y. Xue, B. Huang and **J. Lee**, and F. De Sales, 2016: An Assessment of the SST Simulation Using the Climate Forecast System Coupled to the SSiB Surface Model. *The American Geophysical Union (AGU) Fall Meeting,* San Francisco, USA, 12-16 December
- Christensen, C., S. Liu, G. Scorzelli, **J.-W. Lee**, P.-T. Bremer and V. Pascucci, 2016: Embedded Domain-Specific Language and Runtime System for Progressive: Spatiotemporal Data Analysis and Visualization. *The American Geophysical Union (AGU) Fall Meeting,* San Francisco, USA, 12-16 December
- Park, H.-H., E.-C. Chang, Y. Kim and **J. Lee,** 2016: Study on the Impact of Hydrological Components on the Atmospheric Condition over the Korean Peninsula by the WRF-hydro Coupled Model System. *The American Geophysical Union (AGU) Fall Meeting,* San Francisco, USA, 12-16 December
- **Lee, J.-W.,** P. Gleckler, C. Doutriaux, P. Durack, K. Sperber, C. Bonfils, K. Taylor, and D. Williams, 2017: Summary Statistics for Climate Modes of Variability in the PCMDI Metrics Package. *American Meteorological Society (AMS) 97th Annual Meeting,* Seattle, USA, 22-26 January
- Gleckler, P., C. Doutriaux, P. Durack, **J.-W. Lee,** K. Sperber, K. Taylor and D. Williams, 2017: The PCMDI Metrics Package: Objectives and Capabilities. *American Meteorological Society (AMS) 97th Annual Meeting,* Seattle, USA, 22-26 January
- Park, H.-H., E.-C. Chang, Y. Kim, B.-H. Hwang, **J.-W. Lee**, 2016, Study on the impact of hydrological components on atmosphere over the Korean peninsula by the WRF-Hydro. KMS Fall Conference, Oct 31 - Nov 2, Busan, Korea
- **Professional Services for community**
  - Journal referee for 4 papers from 3 journals which are Climate Dynamics, Journal of Geophysical Research, and Meteorology and Atmospheric Physics

**Next Quarter's Roadmap**
- Merge variability diagnostics to PMP official version
- Submit a paper regarding PMP work (leading) and revise a paper regarding climate extreme change in regional climate modeling which is in reviewing process (co-authoring)
- Advance UV-CDAT scientific examples
- Prepare presentations in upcoming conferences

**Resources Required to Achieve Goals**
- Nothing special for now