



## **ENSO amplitude changes due to greenhouse warming in CMIP5: Role of mean tropical precipitation in the 20th century**

Yoo-Geun Ham (1) and Jong-Seong Kug (2)

(1) Chonnam National University, Gwangju, Korea, Republic Of (ygham@jnu.ac.kr), (2) Pohang University of Science and Technology, Pohang, South Korea

The relationship between the present-climate climatology and those of ENSO amplitude change under global warming in the CMIP5 models is examined. The models with increased ENSO amplitude under greenhouse warming tend to simulate a 20th century stronger climatological ITCZ and SPCZ over the central-eastern Pacific that are located further away from the equator during boreal spring. The budget analysis using moisture equation indicates that those climatological differences lead to stronger positive climatological precipitation change over the off-equatorial central-eastern Pacific under greenhouse warming. The stronger positive climatological precipitation change enhances the air-sea coupling strength over the central-eastern Pacific, which results in the increase of the ENSO amplitude.