[EE] Evening Poster | A (Atmospheric and Hydrospheric Sciences) | A-CG Complex & General

[A-CG36]Satellite Earth Environment Observation

convener:Riko Oki(Japan Aerospace Exploration Agency), Yoshiaki HONDA(Center for Environmental Remote Sensing, Chiba University), Yukari Takayabu(東京大学 大気海洋研究所, 共同), Tsuneo Matsunaga(Center for Global Environmental Research and Satellite Observation Center, National Institute for Environmental Studies)

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In recent years, we cannot avoid facing issues on global environmental changes that occur in various spatiotemporal scales. The earth environmental observation data by satellites became the necessary basic data to tackle and solve those issues. Due to the recent advancement in the observation sensor technique and the data processing technique, the satellite observation has been showing rapid progress, and the time is changing from examining the accuracy of the observation sensor data to the advancement of the data application, leading to broaden potential users. In these days application became synergetic, so we comprehensively pick
up this topic in the Atmospheric and Hydrospheric Sciences Session of this Union Meeting that enables to comprise the atmospheric, oceanic and land sciences; by combining the intelligence and the knowledge of the party, we propose a session that aims to prompt further studies towards the issues on earth environmental change, the advancement in the data application and future plans of Earth Observation missions.

[ACG36-P18]ENSO and PDO effects on sea level changes in the current systems of North Pacific Ocean from satellite altimetry

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The most significant effects of climate variability on the North Pacific Ocean (NPO) are the interannual variability (El Niño – Southern Oscillation, ENSO) and Pacific Decadal Oscillation (PDO) phenomena. Both oscillations are related to ocean temperatures. In this study, the influences of thermal expansion/shrinking by both oscillations on the sea level changes in the different current systems in the North Pacific Ocean are investigated and discussed. Sea level anomaly data derived from satellite altimetry from 1993 to 2014 are used to analyze the variations of sea level change. The results show that 1) sea level rises in the regions of Kuroshio Extension, Oyashio Current, Alaska Current, and California Current during the El Niño and negative PDO phase, 2) sea level rises are not significant or even descend in all current systems during the La Niña and positive PDO phase, and 3) ENSO affects more significantly on sea level changes than PDO does in the North Pacific. These phenomena imply that the thermal expansion is a key factor to cause the sea level changes in these current systems.