Kaoru
Ichikawa
Res Inst for Appl Mech, Kyushu University, Japan
Yutaka Yoshikawa, Kyoto University, Japan
Ken ichi Fukudome, Japan Sea Nat Fish Res Inst, Fish Res Agency, Japan
Akihiko Morimoto, HyARC, Nagoya University, Japan
Jong Hwan Yoon, RIAM, Kyushu University, Japan
Poster
As recent progresses in high-resolution altimeters such as SIRAAL-2 and AltiKa and promising plans of NASA/CNES SWOT and JAXA COMPIRA missions, coastal altimetry is one of the major targets in the altimetry community. However, we do not have sufficient knowledge about high-resolution sea surface height (SSH) in coastal areas where significant ageostrophic phenomena are present. In this study, the GPS system mounted on a ferryboat is used to obtain coastal SSH in the Tsushima/Korea Strait between Japan and Korea. After removing the remained error in a local tide model by the harmonic analysis, the daily SSH along the ship track is obtained with sufficient spatial resolutions since September 2011.
By further removing the temporal mean SSH, temporal sea surface dynamic height anomaly (SSDHA) are further determined.
For variations longer than about 30 km, the GPS-obtained SSHA agrees very well with the SSDHA that is estimated from the 18-m depth velocity observed by the ADCP mounted on the same ferryboat, assuming the geostrophic balance.
Meanwhile, smaller-scale SSDHA variations with approximately 20-km wavelength are found sometimes present with amplitudes of the order of 0.1m, which are not present in the ADCP-obtained SSHA.
Time series of the surface currents observed by the ocean radar system in the southern part of the Tsushima/Korea Strait indicates that surface currents are highly temporally variable at the locations of such smaller-scale SSDHA, suggesting their ageostrophic nature.
OSTS session
Science Results from Satellite Altimetry
Meeting name
Ocean Surface Topography Science Team (OSTST) Meeting
Download to PDF