

S5T1

Global ocean wind waves 1878-2016: new update of the IORAS VOS-based wave products

V. Grigorieva¹ and S. Gulev^{1,2}

**1 Sea Atmosphere Interaction and Climate Laboratory P. P. Shirshov Institute
of Oceanology, Russia**

2 Lomonosov Moscow State University, Russia

The recent massive increase in the global wave information from VOS and from satellite data along with repeatedly updated model wave hindcasts imposes the necessity for developing new updates of the VOS-based wave climatology with advanced pre-processing and data quality control procedures. We present the next generation global wind wave database based on the newly updated IMMA-formatted visual VOS data. The main wave statistics (heights and periods) are now supplemented with the wave geometry characteristics (steepness, wave age and wave length) as well as statistics of extreme waves. All possible sources of uncertainties were estimated and are also included in the climatology. For the pre-processing we used several levels of the quality control technique applied for the correction of raw observations and elimination of erroneous values. Newly developed database is useful for many scientific and practical purposes, such as analyses of global wave climate, estimation of interannual to multidecadal variability and extreme wave statistics. Importantly, the climatology also allows for the global and regional verifications of satellite-based data and model hindcasts as well as testing of wave theories. Some of these applications will be demonstrated.

Oral

- **Reconstructing past climates (products)**