

EGU21-3717

<https://doi.org/10.5194/egusphere-egu21-3717>

EGU General Assembly 2021

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## An Assessment of CYGNSS Ocean Wind Speed Products

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Global Navigation Satellite System-Reflectometry (GNSS-R) is an innovative and rapidly developing approach to Earth Observation that makes use of signals of opportunity from Global Navigation Satellite Systems, which have been reflected off the Earth's surface. CYGNSS is a constellation of 8 satellites launched in 2016 which use GNSS-R technology for the remote sensing of ocean wind speed. The ESA ECOLOGY project aims to evaluate CYGNSS data which has recently undergone a series of improvements in the calibration approach. Using CYGNSS collections above the ocean surface, an assessment of Level-1 calibration is presented, alongside a performance evaluation of Level-2 wind speed products. L1 data collected by the individual satellites are shown to be generally well inter-calibrated and remarkably stable over time, a significant improvement over previous versions. However, some geographical biases are found, which appear to be linked to a number of factors including the transmitter-receiver pair considered, viewing geometry, and surface elevation. These findings provide a basis for further improvement of CYGNSS products and have wider applicability to improving calibration of GNSS-R sensors for remote sensing of the Earth.