Use Delay-Doppler Map Made by Oceanic Reflected GPS Signal to Evaluate Ocean Surface Wind

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The research of GNSS-Reflectometry (GNSS-R) begins at the end of 20 century. As the first GNSS-R satellite mission, UK-DMC satellite carries an experimental payload to receive the reflected GNSS signal from ocean surface. The output of UK-DMC GNSS-R payload is Delay-Doppler Map (DDM), which is the cross-correlation results of received ocean surface reflected GNSS signal in different delay and Doppler. After UK-DMC, the follow on GNSS-R mission are TDS-1 and CYGNSS, which are the mission from UK and USA. In the second half of the year in 2021, the Taiwan built satellite of GNSS-R mission, TRITON, will be launched. TRITON also carries the Taiwan built GNSS-R payload to receive ocean refelcted GNSS signal and produce DDM. In order to retrieve the ocean surface wind from DDM, the system for DDM retrieving will be developed. In this study, the retrieval method will be introduced.

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