Exploring Transformer Networks for GNSS-R Data

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Abstract

GNSS Reflectometry (GNSS-R) has shown in recent years its capability as a novel remote sensing technique to retrieve Earth surface information, e.g., wind speed, soil moisture, and sea ice. The combination of GNSS-R observable Delay-Doppler Map (DDM) and deep learning algorithms provides the possibility to build an end-to-end pipeline for improving surface estimations. Several studies have proved that data-driven approaches could well be applied to generate enhanced estimation products. This talk will review the recent advances in wind speed retrieval using deep networks. Furthermore, an extensive study on exploring and exploiting Transformer networks for GNSS-R will be presented.