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Artificial Intelligence for GNSS Reflectometry: First insights from the AI4GNSSR project

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As a novel remote sensing approach, GNSS Reflectometry (GNSS-R) offers unique potential for characterizing the complex Earth system with its different spheres on various spatiotemporal scales with numerous geoscientific applications. With the continuous increase of space-borne GNSS-R observation data volume, Artificial Intelligence (AI) offers an alternative data-driven direction of achieving a better understanding of the observations and enhancing the quality of existing GNSS-R products. To better adapt AI techniques to this young remote sensing domain, the Helmholtz AI project, Artificial Intelligence for GNSS Reflectometry: Novel Remote Sensing of Ocean and Atmosphere (AI4GNSSR), was proposed to explore further potentials of AI in the GNSS-R domain. The project aims to implement AI for characterizing geophysical parameters and investigate new GNSS-R applications and approaches. In the first stages of the project, the proposed deep learning models are evaluated by a case study, and the impact of input features is investigated.

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