Contribution ID: **5**   Type: **Short Talk**

A path to future-compatibility to navigate the complexity of integrating AI-powered virtual sensing in Digital Twin

Tuesday, 1 October 2024 17:45 (15 minutes)

Digital Twin technology isn't a single monolithic software solution. It is a complex system that must adapt to varying and potentially unpredictable user needs. This adaptability is crucial in environments where data, models, and objectives are shared across different domains, sectors, organisations, and expertise groups and roles across the organisations. Striving to ensure Digital Twin applications and models are future-compatible and can cater to diverse requirements, a holistic approach to design and management is essential. We outline a strategy using a Platform-as-a-Service model for Digital Twinning Infrastructure Components. This approach enables AI-powered virtual sensing to support multiple Digital Twin applications and models, illustrated through a case study where groundwater level measurements are integrated into a digital twin of The Netherlands. We share the insights gained from developing this operational platform service and their implications for future services.

Topic

Needs and solutions in scientific computing: Digital Twins

Primary author: Dr PILEGGI, Paolo (TNO)

Co-authors: Mr KESKIN, Serkan (TNO); Ms SHARMA, Shreshtha (TNO); Ms BEN AZIZA, Syrine (TNO); Mr TRANTAS, Thanasis (TNO)

Presenter: Dr PILEGGI, Paolo (TNO)

Session Classification: Replicating and predicting complex systems with scientific Digital Twins