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## **From laser-plasma accelerator experiments to digital twins – tightening the links by synthetic diagnostics and experimental data reconstruction**

*Tuesday 27 September 2022 17:00 (15 minutes)*

Building high-fidelity digital twins through start-to-end models to better understand and control advanced laser-plasma accelerators, as well as compact free-electron laser beamlines, requires direct comparison to experimental data. We highlight recent results in start-to-end simulations and developments with a focus on their connection to experiment, such as by synthetic diagnostics and experimental data reconstruction analyses.

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**Session Classification:** Data Management and Analysis