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Intergrated Data Workflow using HELIPORT at TELBE

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At the High-Field High-Repetition-Rate Terahertz facility @ ELBE (TELBE),
ultrafast terahertz-induced dynamics can be probed in various states of matter with highest precision. The TELBE sources offer both, stable and tunable narrowband THz radiation with pulse energies of several microjoules at high repetition rates and a synchronized coherent diffraction radiator,that provides broadband single-cycle pulses. The measurements at TELBE are data intensive, which can be as high as 20GB per experiment, that can lasts up to several minutes. As a result, the current data aquisition and data analysis stages are decoupled, where in the first step the primary data is processed and stored at HZDR and in a later step, restricted data access is made available to the user for post-processing.

In this presentation, we present an integrated workflow for post-processing of the experimental data at TELBE with in-built exchange of metadata between the experiment control software LabView and the workflow execution engine UNICORE. LabView manages the data storing exchanges metadata with the electronic lab notebook for automated documentation. We also present the guidance system HELIPORT which manages the metadata of the associated project proposal and job information from UNICORE, and integrates with the electronic lab notebook (MediaWiki), providing a user-friendly interface for monitoring the actively running experiments at TELBE.

Type

Talk

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