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Luigi and Workflow Managers in HEP

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Reproducible, fault-tolerant analysis pipelines are essential to modern HEP computing, and workflow managers provide the backbone for meeting these demands. In this talk, I present an overview of workflow management in HEP, with a focus on Luigi—a Python-based framework widely used in the community—and its HEP-specific extensions, b2luigi and Law. I discuss their design philosophies, key features, and ongoing development efforts. I then broaden the scope with a brief comparison to alternative workflow management tools from outside HEP, including Snakemake, Apache Airflow, Dask/Spark, and emerging commercial platforms, highlighting their relative strengths and trade-offs in the context of typical HEP analysis workflows.

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