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# End-to-end Simulations and ML infrastructure for Light Sources

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SLAC and RadiaSoft are partnering to provide integration support for two parallel workflows that support end-to-end modeling and machine learning integration for accelerators. LUME, Light Source Unified Modeling Environment, has been developed by SLAC to facilitate end-to-end modeling for machine tuning and optimization. This workflow includes the integration of machine learning surrogate models. In parallel, RadiaSoft is developing a workflow, Omega, for chaining simulations developed using different Sirepo applications. This tool allows users to import simulations built in Sirepo and connect them into an end-to-end simulation. Our collaboration is focused on integrating these two workflows in order to provide the community with a unified toolbox for online modeling of light sources. This tutorial will provide a hands-on example for both Lume and Omega that showcases their interoperability.

## Primary Keyword

MLOps

## Secondary Keyword

AI-based controls

## Tertiary Keyword

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