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Titolo	Machine Learning Based Optimization of Laser-Plasma Accelerators // by Sören Jalas
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Disciplina	530.44
Soggetti	Plasma accelerators Machine learning Particle accelerators Mathematical optimization Plasma-based Accelerators Machine Learning Accelerator Physics Optimization
Lingua di pubblicazione	Inglese
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Nota di contenuto	Principles of Laser-Plasma Acceleration -- Bayesian Optimization -- Bayesian Optimization of Plasma Accelerator Simulations -- Experimental Setup: The LUX Laser-Plasma Accelerator -- Bayesian Optimization of a Laser-Plasma Accelerator -- Tuning Curves for a Laser-Plasma Accelerator -- Conclusion.
Sommario/riassunto	This book explores the application of machine learning-based methods, particularly Bayesian optimization, within the realm of laser-plasma accelerators. The book involves the implementation of Bayesian optimization to fine tune the parameters of the lux accelerator, encompassing simulations and real-time experimentation. In combination, the methods presented in this book provide valuable tools for effectively managing the inherent complexity of LPAs, spanning from the design phase in simulations to real-time operation, potentially paving the way for LPAs to cater to a wide array of applications with diverse demands.

