Machine-learning strategies for high-power laser experiments

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Data-driven science and machine learning methods are becoming increasingly relevant for high-power laser experiments. In this talk, I am going to give examples for innovative methods to assist physicists in tasks such as modeling, inverse problems, optimization and image analysis. Particular emphasis will be given to recent results on multi-objective, multi-fidelity Bayesian optimization and compressed sensing for laser diagnostics.

References

[1] Döpp et al., Data-driven Science and Machine Learning Methods in Laser-Plasma Physics, arXiv:2212.00026 (2022)