

Abstract Submitted
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Machine Learning for Shot Classification¹ MILAN WOLFF, Princeton Plasma Physics Laboratory — This research examines preliminary machine learning approaches to classifying shots on the DIII-D tokamak to establish a metric of similarity between shots, classify different modes without human intervention, and indicate previously unexplored regions of phase space. The scope of this project encompasses a database of nearly 12,000 experiments on the machine. A subset of these experiments contain readily distinguishable modes, which form the basis for classification using neural networks, decision trees, and other models. We provide metrics for the accuracy of these different machine learning approaches. Based on the resulting clusters of shots, we discuss parameters most essential to establishing shot similarity, and which parameter combinations warrant further exploration.

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