Color singlet, sextet or octet?
Identifying and distinguishing new physics signals at colliders with machine learning.

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Machine learning provides a powerful tool for identifying and distinguishing new physics signals in large data samples with a lot of Standard Model background events at particle colliders. In this talk, I discuss the discovery and exclusion potential of the LHC with 3000 fb^-1 for pair- and single produced color singlet, sextet and octet spin 1 states in the 4 top final state. We implement a convolutional neural network combined with a fully connected DNN and compare its performance to a swin transformer network in tasks of a) identifying signal events in the event sample, b) determining the mass of the BSM spin 1 state, and c) discriminating color singlets, sextets and octets.