14th MCnet Meeting



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Top tagging with deep neural networks

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The identification of so-called 'boosted' objects; heavy particles whose decay products are highly collimated in the detector, is now a standard part of the event reconstruction toolbox at the LHC. Several QCD-inspired methods that exploit the different signatures between heavy particle decays and soft QCD backgrounds are now well-established. An intriguing new paradigm; 'Jet Images', has recently been proposed, which makes use of training deep neural network algorithms designed for image/facial recognition software, but applies them in the context of classifying boosted event topologies at the LHC. I will discuss an application of these methods to identifying hadronically decaying tops. I show how these methods can offer comparable or even superior performance to currently-used taggers, and speculate on what physics features the network may be learning.

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