

# High Energy Particle Seminar

Wednesday, November 6, 2019 / 705 Pupin Hall / 1:00 PM

## Kevin Nash - Rutgers University

### "CNN Jet Image Tagging: from top measurements to new physics searches"

We detail the application of image recognition to jet tagging in CMS. The method is based on the CNN top tagging optimization seen in [arXiv:1803.00107v1](https://arxiv.org/abs/1803.00107v1) and evolved to include additional color information, b tagging, and an adaptive zoom. Additionally, we demonstrate how this jet tagging network can be decorrelated from the mass of the progenitor jet, which allows for the possibility of tagging BSM objects. We study the impact on top tagging sensitivity, the data-simulation agreement, and the versatility of the network to accept more exotic signatures. Finally, we describe the application to the latest BSM physics searches.