



The 120th HNPIC seminar

Jet Substructure and Machine Learning

Speaker: Dr. Benjamin Nachman, Lawrence Berkeley National Lab

September 3rd, 2020, Thursday, 10:30 am (UTC+8)

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ABSTRACT:

We are in the midst of a QCD renaissance, with significant advances in both experimental and theoretical studies of jet substructure. I will discuss recent developments from the ATLAS experiment, where we are using jets in new ways to measure fundamental parameters of the Standard Model, search for new particles, study quantum properties of inherently interesting emergent phenomena, and tune Monte Carlo event generators. Machine learning is a disruptive technology that is allowing us to study jets holistically in their natural high dimensionality. In the second part of the talk, I will discuss new directions in jet substructure using machine learning for both measurements of the Standard Model and searches for new physics.

ABOUT THE SPEAKER:

Benjamin Nachman, B.A. in Physics, Mathematics and Economics from Cornell University in 2012, Churchill Scholarship (Applied Mathematics) at Cambridge in 2013, Ph.D. from Stanford University in 2016, Chamberlain Fellowship at Lawrence Berkeley National Laboratory 2016-2020, currently Staff Scientist at Lawrence Berkeley National Laboratory.



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