



Laboratoire LEPRINCE-RINGUET  
Ecole polytechnique IN2P3/CNRS

# Séminaire

## Advances in Machine Learning tools in High Energy Physics: deep learning, GAN and more

Machine Learning has been used somewhat in HEP in the eighties, then at the Tevatron and recently at the LHC. However with the birth of internet giants at the turn of the century, there has been an explosion of Machine Learning tools in the industry, in particular with deep learning, but not only, HEP being left behind. A collective effort has been started for the last few years to bring state-of-the-art Machine Learning tools to high energy physics, and to promote collaborations between HEP physicists and Machine Learning specialists. This seminar will give a tour d'horizon of Machine Learning in HEP : review of tools beyond root-TMVA ; example of applications (e.g. parametrised learning, deep learning, image vision, Generative Adversarial Networks) ; recent and future HEP ML competitions ; setting up frameworks for Machine Learning collaborations.

**David ROUSSEAU**  
LAL Orsay

Salle conférence du  
LLR 05-2021

**Lundi 27  
Novembre  
14h00**

[seminaires@llr.in2p3.fr](mailto:seminaires@llr.in2p3.fr)



Responsables séminaires

Sami Caroff  
Jean-Baptiste Sauvan