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DIDACTS (Data-Intensive Discovery Accelerated by Computational Techniques for Science)

Tuesday, July 21, 2020 10:00 AM (40 minutes)

DIDACTS (Data-Intensive Discovery Accelerated by Computational Techniques for Science) is a collaboration of physics and machine learning experts with an overall goal of incorporate scientific knowledge into machine learning and data science methods in the context of scientific disciplines. As part of DIDACTS' research program, we are looking into the challenging problem of Dark Matter direct detection using XENON1T as test bed. The core principle of DIDACTS is that many particle physics experiments lend themselves to 'graphical' data analysis as the data is often hierarchical and irregular. In this talk we will highlight some of DIDACTS' projects such as; graphical convolutional neural networks, quasi-supervised learning via inverse problem regularization, graph learning, and having per-event reconstruction uncertainties using graphical models.

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