量子物理学・ナノサイエンス第 52 回特別セミナー

Searching for Dark Matter with Boosted Higgs Bosons with the ATLAS Detector

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日程 ： 12 月 18 日（月）16：00–18：00

場所 ： 本館 1 階　H155B　理学院セミナー室

概　要

If Dark Matter interacts with Standard Model particles, it could be possible to pair produce Dark Matter in association with another particle at a collider such as the LHC. If this other particle is a Higgs boson, the process is called "mono-Higgs," since the resulting signature is a single boosted Higgs boson, reconstructed using advanced jet techniques, balanced by missing energy from the undetected Dark Matter particles. I will present the latest results of the ATLAS mono-Higgs search, including model-independent limits and limits on a 2 Higgs Doublet Model simplified model. In order to increase the sensitivity reach of the search for future iterations, I have worked closely on the development of new boosted Higgs tagging techniques, including the use of variable radius (VR) track jets. These new techniques, and their performances, will also be presented, and their application to the mono-Higgs and other Beyond the Standard Model searches will be discussed.

連絡教員　物理学系　陣内　修（内線 2081）