Hi, I'm Lesya Horyn

- A 2nd year PhD student
- Working on the ATLAS Experiment with Young-Kee Kim
- 2015 graduate of Tufts University (Boston, MA)

My Past Work

- Started with ATLAS in 2013 at Duke University with Al Goshaw:

  ‣ Project identifying and exploiting Z boson decays as a pure photon source to calibrate detector simulations

- Continued at Tufts with Hugo Beauchemin:

  ‣ Work comparing jet reconstruction algorithms

- Accelerator physics project with Young-Kee Kim, Summer 2015:

  ‣ Studying penetration profiles of superconducting RF cavities

- Relevant skills:

  ‣ 1 year of computer science courses based in C++, continued use through physics analysis (ROOT, etc)

  ‣ Also comfortable with Python, Mathematica, MATLab

  ‣ Coursework: QFT, taking courses on particle physics and particle detectors next quarter

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My Current Projects

- Fast TracKer (FTK), a trigger upgrade for the ATLAS detector

  ‣ FTK reconstructs all tracks passing the Level 1 trigger

  ‣ I have been building a timing model of UChicago's piece of the system, as well as adapting code based emulations of the electronics

- b-jet energy calibration

  ‣ Data-driven in situ method: balance a b-jet (whose energy is poorly measured) against a photon (whose energy is well measured) to reduce b-jet energy uncertainties. Study balance in data and MC to study calibration

  ‣ Currently creating a tool first to validate independently derived MC calibration with my data driven method and then for use in analyses using b-jets