

April 11, 2023 (Week 11)

Collider Physics

Objectives:

- Learn the basics of particle accelerators

Outline:

- Why accelerate particles
- How to accelerate particles
- Types of accelerators
- Fixed targets vs colliders
- Synchrotron radiation
- Structure of the proton and PDFs
- Hadron vs. lepton colliders
- Luminosity

Homework - due 8am April 13, 2023:

1. Prepare/present slides about particle accelerators
 - Sign up for 1 accelerator [here](#)
 - Prepare 1-2 slides
 - When/where is was built
 - What years did it operate
 - What type of accelerator was it
 - What kinds of particles were accelerated
 - What important discoveries were made with it
 - Any new technologies or other notable features
 - You will be asked to present your accelerator in class on April 13