

# March 23, 2023 (Week 9)

## The Standard Model

### Objectives:

- Review the Standard Model of particle physics

### Outline:

- Classical physics to QFT
- Gauge theories
- QED
- Weak interactions
- QCD
- Particle content of the SM
- Particle Data Group
- Feynman diagrams

### Homework - due 8am March 28, 2023:

1. Prepare/present slides about SM particles
  - Sign up for 2 particles [here](#)
    - Don't pick 2 similar particles
  - Use the PDG reference guide as your primary source but can use other sources as well
  - Prepare 1 slide per particle
    - When/how it was discovered
    - Mass, width and mean lifetime
    - Charges for all fundamental interactions
    - Couplings to other SM particles
    - Anything else that is notable
  - You will be asked to present your particles in class on March 28