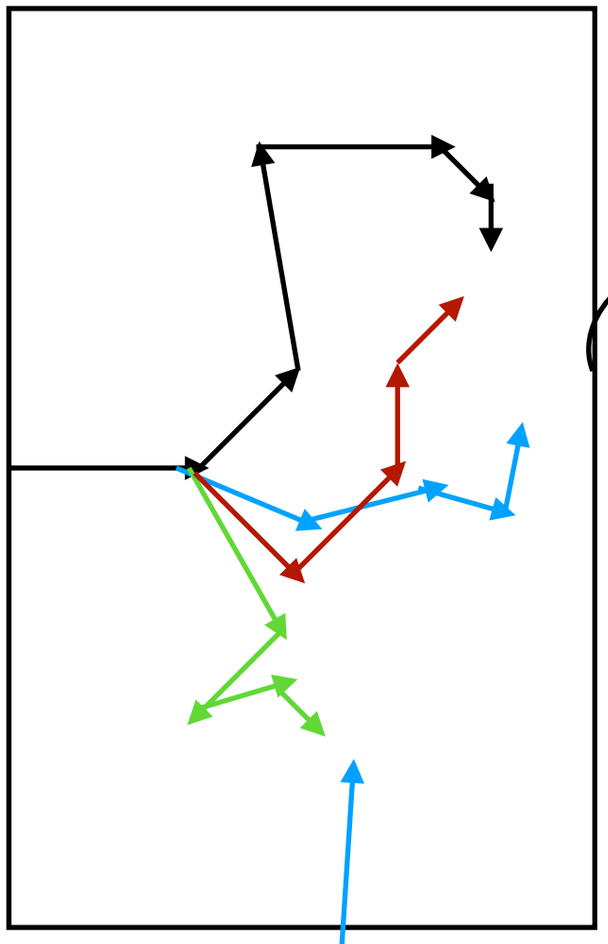
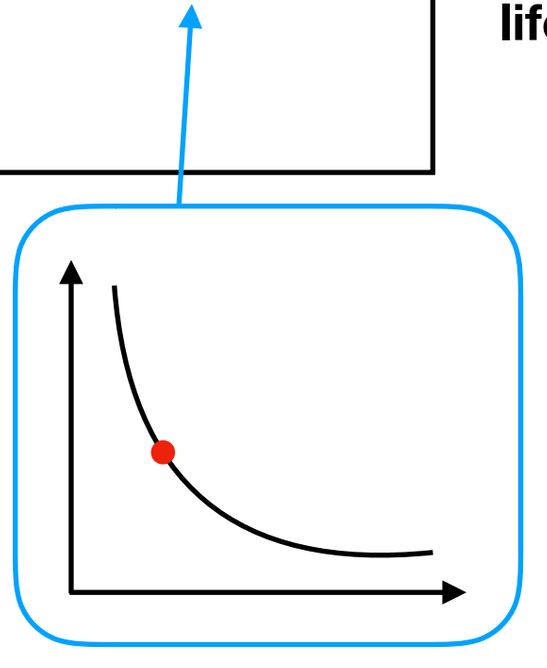
Major Steps of MC DSAM Simulation

1. Simulate particle tracks in SRIM

2. Randomly choose particle track



3. Randomly generate a decay time and simulate nuclear decay at that instant



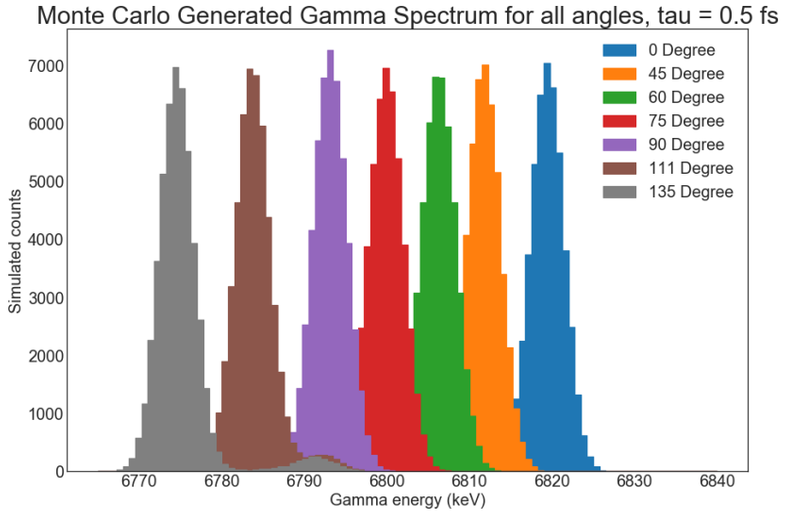
4. Using Eqn. 4.11, calculate and record the Doppler shifted energy observed by a detector at angle θ

Detector

θ

Detector

5. Repeat simulation for all combinations of lifetime, target material and detection angle



6. From this information, calculate all simulated Doppler shifts and corresponding F(τ) to create relationship for determining measured lifetimes