

Homework for the lecture on Linear Collider Detectors

**An introduction to detector design principle
and physics that drives it**

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1. Explain how recoil mass technique works for the measurement of the cross section of $e^+e^- \rightarrow Zh$ (σ_{Zh}).
2. Explain PFA.
3. Calculate the radius of the track of a charged particle in a uniform magnetic field of 5T with a transverse momentum of 30GeV.
4. Calculate the corresponding sagitta for the lever arm length of 1m.