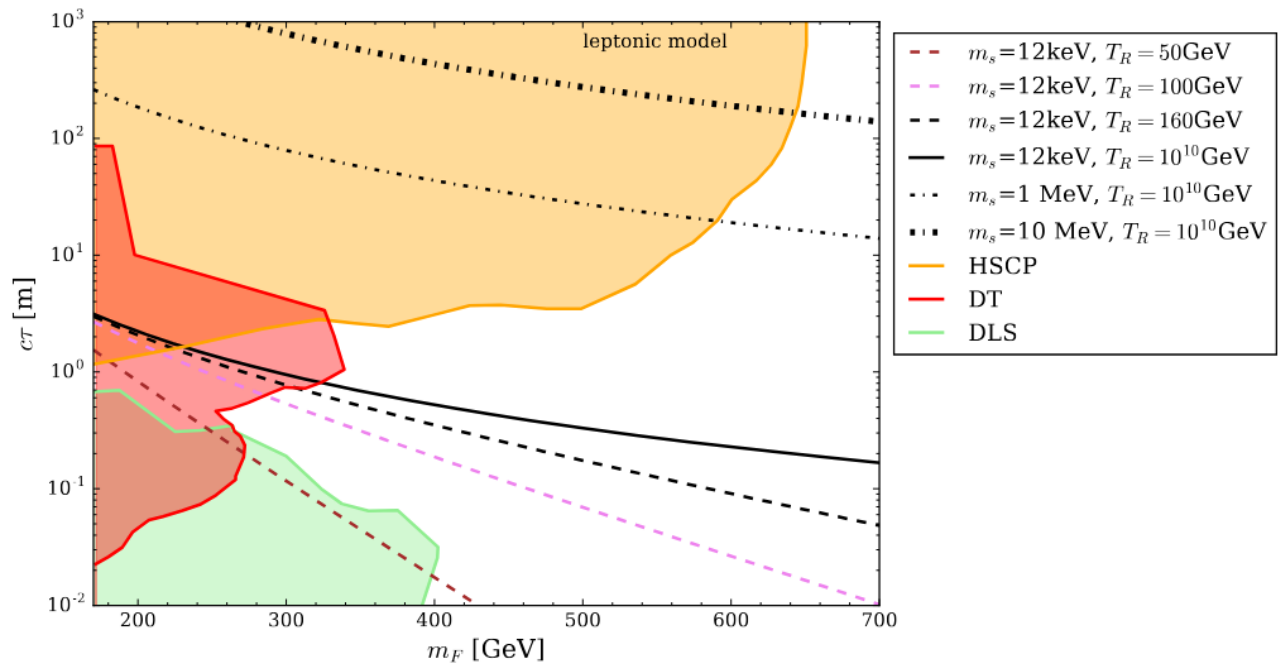# Can we measure DM/cosmological parameters using LLPs? How well?

1811.05478

Signal, m_F = 200 GeV, m_{DM} = 2 MeV, ct = 1 m

True vertices
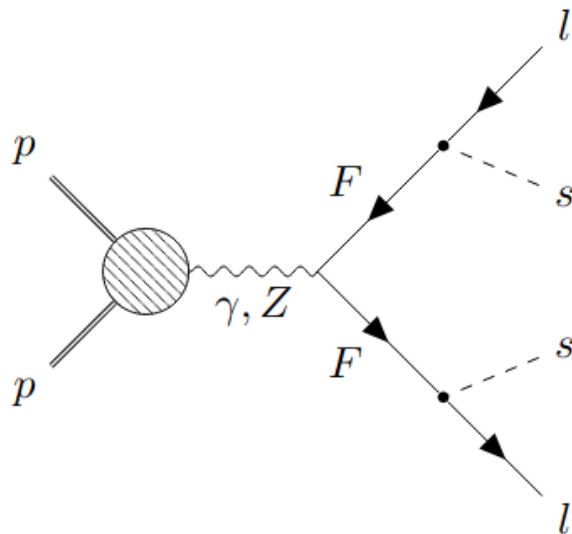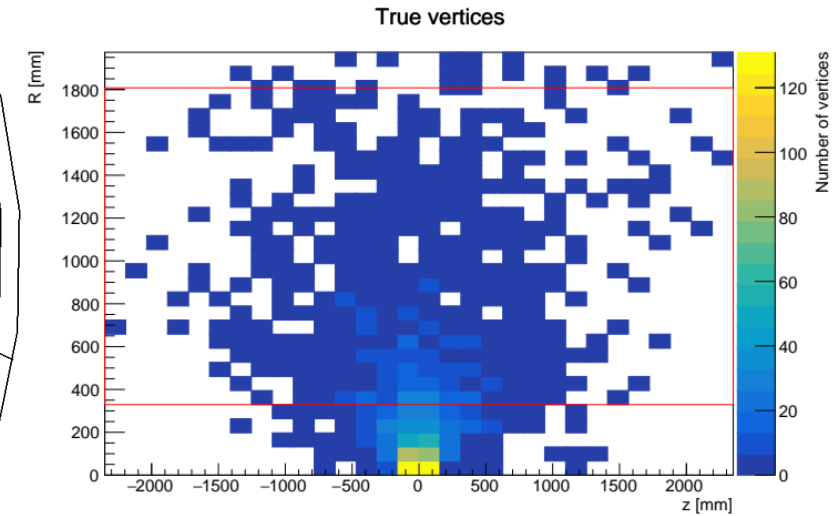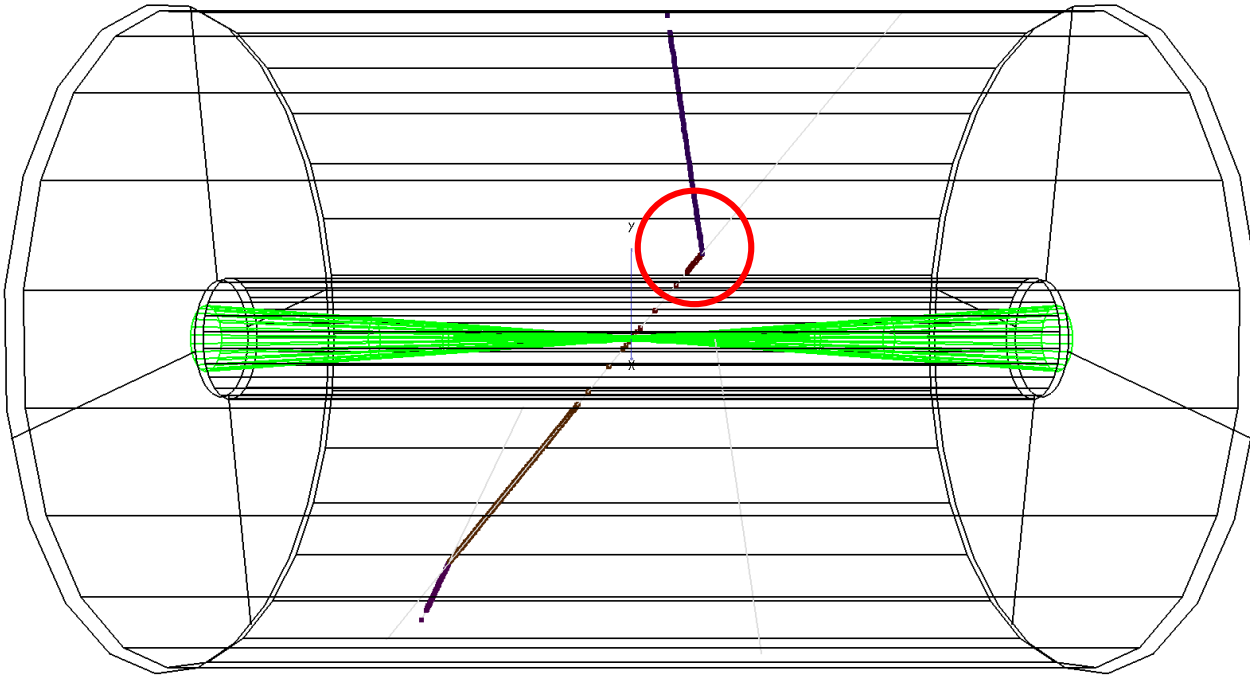
- KinkFinder seems to have limitations for such events (secondary track goes back to smaller Z)
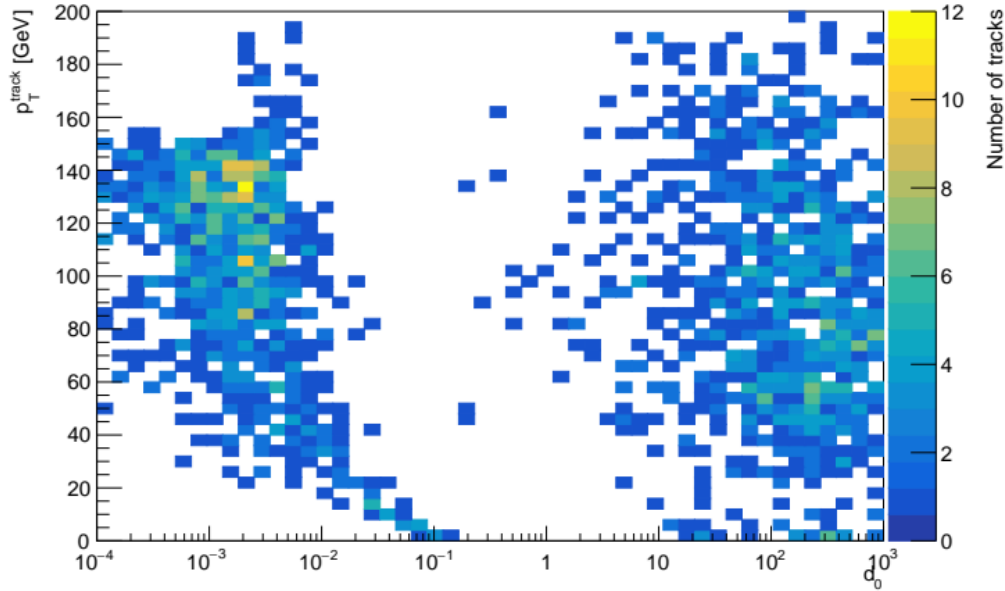
- Look for smaller displacements?
  → displaced track signature

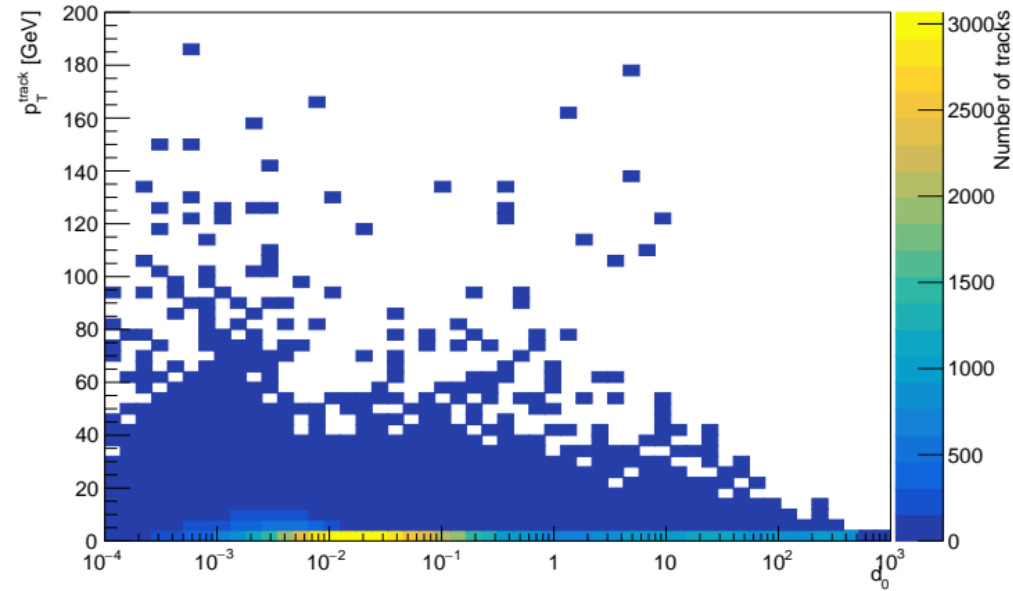These plots made with ILC @ 500 GeV, these are samples I've already had processed

Signal, m_F = 200 GeV, m_{DM} = 2 MeV, ct = 1 m

qqbar background

qqbar easy to suppress also with cuts on number of tracks with high momentum
→ need to check dilepton sample

Outlook

- ILC @ 1 TeV should be the main focus

- Background samples for ILD @ 1 TeV are produced with old detector design, ILD_o1_v05 (Mokka)

- 2f_Z_lep sample simulated (just detector response)

- Overlay currently processing

- Signal with mF = 450 GeV and ct = 100 mm currently processing

- Even smaller lifetimes ?