Low-p_T UPC D^0 analysis using '23 UPC reconstruction data

- **Pre-approval presentation was given last Friday. We've scheduled with ARC for the first discussion of the analysis, which will happen in the beginning of next week.**

- **Update of the week**
  - Larger official MC datasets are ready. Rerunning the whole analysis chain with the larger dataset
  - Investigating the invariant mass fit with wider D0 mass window
    - Some structures (D0 decays) are seen in the lower sideband
  - Developing MC reweighting framework
    - Prepared the D0 production spectrum with the EMD correction on Pythia8 simulation
    - Framework is set to assign the (Dpt, Dy) weights to the MC sample
  - Prompt (D^0) production fraction study
    - Discrepancy in f_{prompt} extracted from data & MC is seen. Possible reasons of disagreement could be the tracking resolution differences between data & MC, and the MC hasn't been reweighted to match data (or other more sophisticated theories)
    - The systematics propagated from the f_{prompt} difference is ~13-20%
    - We will start implementing the MC reweighting. We will attempt to have a better DCA modeling with the consideration of the data-MC resolution difference if within QM timeline.