Engaging New Collaborators in Benchmarking Studies

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- Discussions with Andrei Nomerotski (Oxford group):
  - Focus will be benchmarking of vertex detector via flavor and charge tagging performances.
  - Started getting familiar with SiD framework.
  - Three analyses already started:
    - Forward-backward asymmetry in $e^+e^- \rightarrow bb$ (w/ Ben Jeffery, grad student): mostly charge tagging.
    - Top anomalous couplings (w/ Erik Devetak; grad student): flavor and charge tagging.

    $\Rightarrow$ Both analyses above started with LDC framework but plan to try some SiD-like geometries.
    - Higgs self-coupling (w/ Tomas Lastovicka; post-doc): flavor (incl. charm) and charge tagging.

    $\Rightarrow$ Should be done within SiD framework.

  - Main needs (both involve Norman):
    - Consolidate tracking package in org.lcsim.
    - Interface of LCFI vertexing tool (incl. ZVTOP + NN-based b-tagging) in org.lcsim.

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- Discussions with Marcel Stanitzki (RAL group):
  - Had a phone conference a few weeks ago.
  - Sizable group (~10 people) with ~2-3 FTEs expected to get in involved in benchmarking studies.
  - Group interested in vertexing (LCFI) and calorimetry (EM and PFA).
  - Started getting familiar with SiD framework.
  - Also expressed interest in status of PFA within SiD framework and the possibility of interfacing Pandora PFA.

  - Suggested benchmarking studies:
    - Determination of CP properties of Higgs via τ polarization in $h \rightarrow \tau\tau$: EM granularity.
    - Measurement of B($h \rightarrow cc$): targets vertex detector.
    - Other possibilities include e.g collaborating with Oxford group on Higgs self-coupling, studies in $tt \rightarrow$ alljets (vertexing + jet energy resolution), etc.
  - For now:
    - Marcel plans to start from simpler study: B($h \rightarrow \gamma\gamma$); targets EM energy resolution;
    - Marcel is trying to convince a PhD student to work on B($h \rightarrow \tau\tau$).
    - As a group might likely work on $tt \rightarrow$ alljets (cross section and top mass).
  - Will internally discuss about various suggested projects and let us know about their decision.