BT Work plans

Meeting with Bill, Steve, Aous, Riccardo, Eric C, Philippe, Luca, Johan, Leon, Robert Johnson during the collaboration meeting to discuss BT and background rejection

- Effects of BT discrepancies on background rejection:
  - Michael et al working on a new release to include pass5 variables into BTRelease; fixing some issues with tagger variables as well; now working on issues from synchornization with GR
  - the plan is to check CTBTKR/CAL/GamProbs in the CU and go back to more raw variables in case of differences; prefilter cuts should be first checked; CTBCPFGamProb is not applicable to CU geometry given the few ACD tiles available
  - Riccardo is documenting prefilter cuts and relative variable importance for pass5 and will maintain a page for further passes - **work in progress**
  - several people expressed interest for studying a specific subsystem set of variables, which will eventually help shaping a core team of background rejection analyst - more are welcome
  - open discussion on which tool should be used to deal with classification analysis (IM, RForest, orange, ROOT); Bill strongly suggest IM, at least for a softer learning curve and easier comparison with his analysis

Some suggestions from Bill and Steve discussed yesterday

- Background rejection variables
  - Bill looked at runs 2082 (20GeV e, 0 deg) and 1445 (full-brem gammas) and ran his CT analysis for data and MC; preliminary indications give a small effect on CTBTKRGamProb, a 7% difference on CTBCALGamProb but a negligible effect on the final event classification, i. e. CTBClassLevel; this is encouraging

- Tkr variables
  - Bill wants to independetly double-check the beam cleanliness by hand-scanning some events; we discussed on the possibility of providing such a sample set of events along with systemtest or through the pipeline (Tony should be able to run WIRED on the web from user requests on specific runs and number of events)

- Energy scale discrepancy
  - Bill is reassured by the Geant4-EGS5 comparison, he believe we have a miscalibration somewhere, either in the beamline settings or in the CAL calibration
  - Steve is looking into the CAL calibration procedure with help from Sasha and Philippe
  - Bill requested an evaluation of the overall uncertainty on the absolute CAL calibration from the uncertainties in the various steps of the calibration
  - Philippe will finalize his analysis of calibration factors to be used for i) scaling CAL variables in the data-like simulation ii) use them to recalibrate the LAT CAL if needed