# VBTF Z signal extraction task list until ICHEP

## Muon channel

**Napoli**: Michele is already heading the effort of the reference analysis by looking the runs one-by-one in prompt-Reco, and by hunting the Z candidates in the several categories. Continue to push on Z hunting/counting/invariant mass plots and focus also on estimates of HLT, isolation efficiency.

**MIT**: focused on methods for background estimate (fit for low purity categories, fake rate method for high purity categories): check the minimum luminosity to obtain background estimate with reasonable uncertainty. If you expect reasonable uncertainty for ICHEP, then push for it.

**Aachen**: focus on the methods you have proposed of validating MC trigger/isolation efficiencies.

**Karlsruhe**: look in detail the properties of the first Z candidates events (actually this activity is a little bit out of the scope of this group, but anyway is an important task for VBTF).

## Electron channel

**Kalanand Mishra (FNAL)**: Focus on the machinery to simultaneously estimate Z signal cross section and electron selection efficiency with best achievable precision. Work on devising the fit to exploit difference in S/B ratio for low purity sample for Barrel+Barrel, Barrel+Endcap, and Endcap +Endcap regions. Put together results from all subgroups as ingredient for the final fit.

**MIT+Nebraska+LLR**: Focus on methods for background estimate for high purity category (fake rate/ same sign dilepton methods). Check the minimum luminosity to obtain background estimate with reasonable uncertainty. If you expect some reasonable method can work for ICHEP then push for it.

In addition, MIT group will also provide Z acceptance numbers for basic electron reconstruction (i.e., both super clusters with et>20 GeV, within the ECAL fiducial volume excluding the gaps, and Z mass range to be decided with muon channel team).
Si Xie will report for this subgroup.

**Princeton+Dmitry Bandurin**: Jeremy Werner is already scanning the prompt-Reco data looking for Z candidates in the several categories. Continue to push on Z hunting/counting/invariant mass plots. Also provide generator level and reconstructed Z line shape to be used for simultaneous fit. Work closely with KM. Help with QCD background estimation, and any other task which need immediate attention. Jeremy will report for this subgroup.

**KSU/ Mikhail Makouski**: Focus on estimates of electron reconstruction efficiency, both data-driven and MC-based. Work on optimizing the electron selection for low purity sample. Continue working on improving the super cluster selection using H/E and/or HCAL isolation. Run over data in real time and provide feedback. Work closely with KM.

**Wisconsin/ Christos Lazaridis**: Look in detail the properties of the initial Z candidates events. Focus on the methods of of validating MC trigger/isolation efficiencies.