Readyness of TileCal reconstruction for pileup

- Energy reconstruction in TIleCal is done with so-called Optimal Filter method two main ingredients of Optimal filter are
  - Pulse shape (which “never” changes)
  - Noise autocorrelation matrix (correlation between 25-ns samples)
- Without out-of-time pileup (i.e. bunch spacing > 200 ns) noise autocorrelation is not changed and it is determined by electronic noise only, i.e. energy reconstruction is not affected by in-time pileup
- In TileCal, pedestal for every channel in every event is calculated from event itself, so base line shift is not an issue

Readiness of TileCal pileup noise constants

- Clearly, any pileup makes cell energy distribution wider and produces asymmetric non-Gaussian tails
  - Pileup noise term is stored in DB together with electronics noise
  - It should be calculated and stored in DB for every possible bunch spacing
- Pileup noise for 900 ns bunch spacing is in COOL already (OFLP200 DB only)
- As soon as exact bunch spacing for real data pileup is known, similar numbers should be stored in COMP200 DB
- Pileup noise RMS for other MC configurations (e.g. 50 ns or 25 ns bunch spacing) is being calculated