

Key Questions for Upgraded PHENIX Calorimetry

- The Compact EmCal may have severe occupancy (cluster overlap) problems in central Au+Au collisions because its too close (at 40-60 cm)? Anders back-of-the-envelope estimate is that filling fraction is ~42% (compared to present emCal at 1.9%).
 - CMS emCal is at 1.29 m and will see ~3x larger multiplicity. So would moving CEMC to 1.29 m help us?
 - Would a detailed simulation show that since we concentrate on higher-pT particles, the above occupancy is largely from lower energy and doesn't affect these too much? What would we lose if this is the case?
- Trigger, given VTX & solenoid conversions?
- Very high-pT trigger?
- HCal – what technology would give a hermetic hadronic calorimeter suitable for FULL jet reconstruction?
- What level of particle ID is necessary for studying these jet shapes and modifications?*
- Forward calorimeter near beam, rates, occupancy?
- What radiation damage would existing calorimeters (particularly PbSc) receive at forward rapidities (down to 2 degrees)?
- Similarly what occupancy problems would occur at very small angles?
- Can the forward spectrometer work in central Au+Au at all?

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