Instrumentation Frontier
IF06 – Calorimetry – White Papers
Lead Authors

1) **Collider**

- Particle Flow Calorimetry for Future Colliders
  Katja Kruger (DESY)
  Randi Ruchti (Notre Dame)

- Dual Readout Calorimetry for Future Colliders
  Sarah Eno (Maryland)
  Franco Bedeschi (INFIN-Pisa)

- Precision Timing for Collider Experiment based Calorimetry
  Frank Simon (MPP Munich)
  Sergei Chekanov (ANL)

2) Neutrino

- Calorimeter Techniques and Materials for Neutrino Experiments
  Milind Diwan (BNL)
  Jae Yu (UTA)

All lead authors have agreed to serve

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3) **Dark Matter**

- New Calorimeter Techniques and Materials for Dark Matter Detection
  David Winn (Fairfield)
  Rick Gaitskell (Brown)

4) **Materials**

- Materials for Future Calorimeters
  Ren-Yuan Zhu (Caltech)
  Minfang Yeh (BNL)

5) **Astro/Cosmic** - possible White Paper - maybe include these LOIs in an IF02 paper?

All lead authors have agreed to serve

Calorimetry Electronics

Some thoughts:

- PFlow – Fast e.m. component vs hadronic, slower neutrons
  ? Detailed (x10 ps) timing as extension of PFA
  SiPM r/o HCal
  MAPS ECal

- Dual readout – Timing, pulse shape for C vs. S components, overlaps in space in single elements?
  x10 ps timing for effective longitudinal separation
  SiPM r/o

- Precision timing layers – Δt ?

- Neutrino - single/dual phase TPC
  Aiming for joint paper with NF

- DM – low noise

- Materials - pulse shapes from crystals, organics

? Collect electronics needs from IF06 WPs – section in Exec Summary?
? Common with IF07?