Calorimetry

Key points identified in calorimetry are:

- Technologies that can augment the energy resolution of calorimeters,
- Technologies that allow ultra-fast material, front-end and data processing that allow operation in high background environments and improved particle identification.
- Technologies that combine high spatial and time resolution with radiation hardness for operations in harsh environment.
- Technologies that develop cost effective materials allowing large coverage for future large calorimeters.

ALSO VERY IMPORTANT

- **Feasibility** for experimental application (need to scale up) and anticipated final **cost** when applied.

My motivations

CAVEAT - IN THE CONTEXT OF COLLIDER DETECTORS

- Interested in optimizing overall detector performance with **innovative detectors**

  tracking, calorimetry, particle ID

- while maintaining optimized **costs** at the same time.

- This has drawn me to the development of MAPS

  potential for **excellent** tracking AND EM calorimetry.

  Requires development of a state of the art sensor

  with properties driven by **specific experimental application**.

Feasibility and cost constrained

- MAPS for tracking and calorimetry are feasible and can be cost effective
  standard CMOS foundry
  low resistivity
  no bump bonding

- with excellent tracking based on 25 um pixels and calorimetry that exceeds the TDR design for the LC

- So this means while working on the **key points**, thinking globally on how the advances will lead to practical applications
  That are feasible for application at reasonable cost after scaling up concepts.