ILC and future particle physics projects (accelerator based)

Felix Sefkow, Nov 21, 2017

- **Introduce ILC**
  - TESLA – XFEL – ILC, DESY role
  - European Strategy and its update, Status in Japan, ICFA statement
- **Physics case ILC 250**
  - Effective FT, Higgs couplings
  - BSM potential w.r.t LHC
- **Detector concepts ILD, SiD**
  - Leadership, central role ILD, TDR
  - software framework key
  - MDI, connection to machine, CFS
- **Detector technologies**
  - Calo (ILC, LHC), TPC -> **MT**
  - Infrastructure (and TB), DESY as development centre, EU projects
- **Strategic perspective**
  - If ILC takes off: DESY in unique position to lead experimental effort, European contribution
  - If ILC on hold: capitalise on our expertise in other future project(s)
- **Future projects**
  - Particle physics has many options
    - Overview, timelines, ESU
  - CLIC: similar detector concept
    - coop in software, calo, opt
  - Circular e+e- machines
    - Being approached
  - FCC
    - Coop software, envisage LC driven technologies (HGCAL)
- **FLC group**
  - Physics, software, detector
  - Together: strong impact on future project conceptual study (studies)
    - Coherence with other German / European groups
  - **Mid-term future: DUNE @LBNF**
    - Introduction, project, physics
    - Status, time-line
      - Near detector after HL-LHC
    - Possibility calorimeter
      - SiPM technology, test beam
      - Other German efforts
        - MPP Munich
        - R&D at MZ (HD)