

4-Dimensional Trackers

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1 Introduction

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Physics motivations for 4D trackers Resolutions (space-time), layout considerations, constrains: Power and material budget)

1.1 Hadron colliders: HL-LHC and FCC-hh

1.2 e^+e^- colliders: ILC, CLIC, C³

1.3 Muon Collider

Hanns Jörg Weber, Sergo Jindariani

1.4 Electron Ion Collider

Zhenyu Ye

2 Sensor technologies

Simone Mazza, Ryan Heller, Ron Lipton, Gabriele Giacomini, Jennifer Ott

LGADs, AC-LGADs, Trench-isolated LGADs, Deep Gain LGADs, Deep Junction LGADs, 3D

Fine spatial resolution and course time resolution: CMOS MAPS

Radiation hardness

3 Electronics

Ariel Schwartzman, Simone Mazza, Su Dong, + additional contributors

Challenges: power, bandwidth, noise, small area, resolution

4 Layout

Ariel Schwartzman, Ryan Heller, + additional contributors

5 Key areas for future R&D

Ariel Schwartzman, Simone Mazza, Su Dong, + additional contributors

6 Summary

References