

# Research of AC-LGAD strip detector for 4D tracking

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With the development of collider experiments, the demand for detectors with high time and spatial resolution has become increasingly stringent. AC-LGAD has sparked wide research due to its exceptional time and spatial resolution and can achieve lower readout electronics density under a fixed effective area and enable position resolution with directional sensitivity. The project aims to develop an AC-LGAD strip for future colliders such as CEPC, FCC-ee, ILC, CLIC, etc.

IHEP associated with IME has developed an AC-LGAD strip sensor prototype with 150-250 $\mu$ m pitch and 5.6 mm length and achieved time resolution up to 30 ps scale and spatial resolution to 10  $\mu$ m scale. AC-LGAD strip will contribute to the technical design reports for future lepton collider projects, and even other experiments demanding 4D tracking ability beyond collider experiments.

## Type of presentation (in-person/online)

in-person presentation

## Type of presentation (I. scientific results or II. project proposal)

I. Presentation on scientific results

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