Contribution ID: **27** Contribution code: **THXC4** Type: **Contributed Oral Presentation**

The design progress of the high-intensity muon source at CiADS

Thursday 4 September 2025 18:35 (20 minutes)

A high-intensity muon source named MuST has been proposed for several years at CiADS. Utilizing the 5-mA proton beam of CiADS linac on targets, multiple muon beamlines can be fed, and the intensity of the DC muon beam is expected to be record-breaking. Here, the conceptual layout of MuST, including the tandem targets, the muon beamlines, and the terminals, is presented. The development plan and the conceptual design progress are reported. The study of the liquid jet target, which is more efficient in producing surface muons than graphite and has the potential to withstand a 3-MW proton beam, is presented. The design details and overall performance of the muon beam lines are introduced. The key beam parameters of the surface muons and decay muons are given.

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

Author: CAI, Han-Jie (Institute of Modern Physics, Chinese Academy of Sciences)

Co-authors: Dr TIAN, Binbin (Institute of Modern Physics, Chinese Academy of Sciences); Mr LU, Guihao (Sun Yat-sen University); JIA, Huan (Institute of Modern Physics, Chinese Academy of Sciences); Mr NIU, Jianwei (Institute of Modern Physics, Chinese Academy of Sciences); Mr LI, Jincheng (Institute of Modern Physics, Chinese Academy of Sciences); Dr WANG, Rong (Institute of Modern Physics, Chinese Academy of Sciences); Ms SHUAI, Wenwen (Institute of Modern Physics, Chinese Academy of Sciences); Ms ZHOU, Xinyu (Institute of Modern Physics, Chinese Academy of Sciences); HE, Yuan (Institute of Modern Physics, Chinese Academy of Sciences); QIN, Yuanshuai (Institute of Modern Physics, Chinese Academy of Sciences); WANG, Zhijun (Institute of Modern Physics, Chinese Academy of Sciences); Mr ZHANG, Zhilv (Institute of Modern Physics, Chinese Academy of Sciences)

Presenter: CAI, Han-Jie (Institute of Modern Physics, Chinese Academy of Sciences)

Session Classification: Parallel Talk Session 4

Track Classification: MC5: Novel Particle Sources