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Status and prospects of TPC module and prototype R&D for CEPC

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To meet the high precision physical goals in the future e^+e^- circular collider (CEPC), the high resolution tracker detector for the particle track reconstruction ($100\mu\text{m}$) and particle identification are demanded. Time Projection Chamber (TPC) is one of the main concept option of the central tracker detector. On behalf of the track detector subgroup in CEPC, the status and update R&D results of TPC module and prototype for the specific requirements will be presented in this talk. TPC module will could suppress the ions in chamber continuously running in the different gains (2000-5000) and T2K mixture gases, and TPC prototype with MPGD detector module integrated the narrow laser calibration tracks system. the update results of the spatial resolution, dE/dx will be presented too, and the update results of the requirements, simulation and consideration will be given according to the pad and pixel TPC detector concepts will operate at the high luminosity Z pole at CEPC.

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