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Fundamental power couplers development at CSNS campus

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The China Spallation Neutron Source (CSNS) project is now operating stable at the CSNS campus and the upgrade work (CSNS-II) has already started in 2023, meanwhile, the preliminary research work on the south advance photon source (SAPS) project is in progress. More than six types of accelerator cavities: radio frequency quadrupole (RFQ), drift tube linac (DTL), double spoke superconducting cavities, elliptical superconducting cavities, Debuncher and C band traveling wave structure, and so on in these projects, requiring corresponding different fundamental power couplers (FPCs). These FPCs are divided into waveguide and coaxial types. Different coaxial FPCs are chosen for the superconducting cavities and RFQ, while waveguide FPCs are chosen for the DTL, Debuncher, and traveling wave structure as they need a high peak power. In this paper, we will review the FPCs development at the CSNS campus. The basis for selection, design considerations, operating or testing results, etc. will be all detail described in this paper.

Footnotes

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Paper preparation format

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Asia

Primary author: FAN, MengXu (Institute of High Energy Physics)

Presenter: FAN, MengXu (Institute of High Energy Physics)

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