



Contribution ID: 1664 Contribution code: THPA103

Type: **Poster Presentation**

The phase averaging scheme for phase reference line of CiADS SC Linac

Thursday, 11 May 2023 16:30 (2 hours)

The CiADS linac is a superconducting linear accelerator which has hundreds of RF cavities. The stable phase reference line is essential for effective control of accelerating fields in RF cavities, it provides phase reference signals for low level radio frequency systems, beam position monitor systems and timing system with low phase drifts. The phase reference line of CiADS SC linac is a coaxial cable based RF phase distribution system, a new phase averaging scheme has been designed to minimize the phase drifts in the main distribution line, which is hundreds of meters long. Instead of controlling the temperature of cable, the phase averaging scheme compares the forward and reflected signals at each tap point to get the reference phase. The new phase averaging scheme can overcome the VSWR ripple, which is the main disadvantage of using the traditional phase averaging reference method. This paper describes the design scheme and the prototype test results.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: DING, Xinghao (Institute of Modern Physics, Chinese Academy of Sciences)

Presenter: DING, Xinghao (Institute of Modern Physics, Chinese Academy of Sciences)

Session Classification: Thursday Poster Session

Track Classification: MC6: Beam Instrumentation, Controls, Feedback and Operational Aspects:
MC6.T27: Low Level RF