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The RF power sources of CSNS-II Linac

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The CSNS-II Linac consists of H- ion source, RFQ and four DTLs, twenty superconducting Spoke cavities and twenty-four superconducting Elliptical cavities. The RF frequency of the RFQ, DTLs and Spoke cavities is 324MHz, and the Elliptical cavities are 648MHz. The repetition rate of the RF pulse is 50Hz, the RF pulse width of the normal conducting is less than 900µs, and the superconducting is less than 1.2ms. The 324MHz klystron power sources provide RF power to the RFQ and DTL accelerators. The prototype of the mega-material 324MHz klystron has been developed tested successfully, the peak power can reach 3MW. The 648MHz klystron power source provide RF power to Spoke cavities, both the 324MHz klystrons and the 648MHz klystrons are provided high voltage pulse by long-pulse solid-state modulator. The Spoke cavities are powered by 324MHz/300kW solid-state RF power sources based on the GaN amplifier. The prototype of the 324MHz/300kW solid-state RF power source is also developed now, the test results satisfied the requirements of the spoke cavities.

Paper submission Plan

Yes

Best Presentation

No

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