

Status of 400MHz, 1MW, CW FCCee Two-stages multibeam klystron development

The innovative concept of two-stage multi-beam Klystron has been previously investigated and studied for 1GHz, 20MW multi-beam klystron for CLIC. This technology utilizes low voltage electron beam in its first stage to compress the tube length and DC post acceleration in the 2nd stage to ensure high overall efficiency. It is very practical for the compact design at low frequencies (UHF and L-band), high power (Multi Megawatt) and high efficiency (>80%) klystrons. TS MBK concept was adopted as a baseline for a 0.4 GHz, 1.0 MW, CW klystron for the FCCee. We will report our progress on the modelling and design study of the FCCee TS MBK. This design provides efficient solution for the different stages of FCC machines (Z->W->H->ttbar2 poles) in the power range from 0.6 MW to 1.2 MW. Design, prototyping and measurements of the high voltage isolated RF feedthrough (HVRFT), which provides isolation up to 60 kV DC and enables RF diving signal transmission to the first stage of TS-MBK will be presented as well.

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