

The results of klystron input cavity measurements

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The multi cavities S-band klystron with an output pulse power of 50 MW is developed at Budker Institute of Nuclear Physics SB RAS. Such klystrons are needed for many fundamental scientific projects: SKIF, Super C-tau factory etc.

The input cavity is one of the most important cavity in the klystron. Its quality influences on the gain and efficiency of the klystron. The input cavity should have a sufficient list of the requirements: a vacuum coaxial line coupling; frequency matched with the beam; ability to adjust frequency and coupling after manufacture; work stability without self-excitation etc.

This work describes the parameters of the input cavity, its design, as well as measurements without and with beam. It is experimentally shown that the input cavity is almost completely matched with the microwave power coaxial line coupling with the operating current of the beam. The conditions for the appearance and decrease of multipactor discharge are described.

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