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RF design of a two-stage pulse compression system based on Barrel Open Cavity

In this paper we desgin a X-band two-stage pulse compression system based on barrel open cavity (BOC), which is driven by a 6-MW X-band klystron. By utilizing numerous coupling holes surrounding the resonant cavity, a rotating-wave-like mode is excited in BOC, thereby enabling an extremely high Q-factor over 2.3×10^5 at 11.424 GHz. A RF pulse can be flattened through the employment of the correction cavity chain. This two-stage pulse compressoion system is designed to modify an input pulse of 5 µs into a flat-top pulse of 250 ns with a power gain over 10.

Footnotes

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