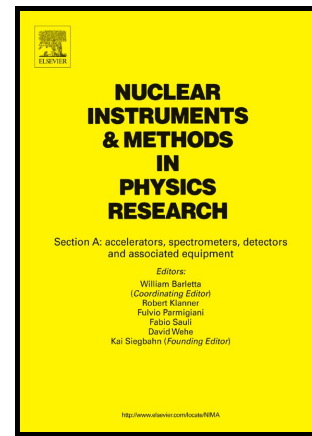


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# X-band Linac for a 6 MeV Dual-Head Radiation Therapy Gantry

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## Abstract

We developed a design for a 6 MeV X-band linear accelerator for radiation therapy in a dual-head gantry layout. The dual-head gantry has two linacs that can be operated independently. Each X-band linac accelerates electron bunches using high-power RF and generates X-rays for radiation therapy. It requires a versatile RF system and pulse sequence to accomplish various radiation therapy procedures.

The RF system consists of 9.3 GHz, 2 MW X-band magnetron and associated RF transmission components. A test linac was assembled and operated to characterize its RF performance without beam. This paper presents these results along with a description of the gantry linacs and their operational requirements.

*Keywords:* RF system; X-band; LINAC; Radiation therapy.

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