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Design of a CW RFQ as axial injector of high intensity cyclotron

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We propose to develop a compact superconducting cyclotron to accelerate H_2^+ ions for isotope production since using H_2^+ allows the use of a stripper foil after extraction from the cyclotron to remove the binding electron, thereby doubling the electrical beam current. An RFQ, partially embedded in the cyclotron yoke, will be used to bunch and axially inject the H_2^+ beam into the cyclotron's central region because RFQ has excellent bunching capability. In this paper we are presenting the design of the RFQ, including beam dynamics, electromagnetic structure and geometrical cavity.

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Footnotes

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Yes

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