NEW DESIGN FOR THE SARAF PHASE II LINAC

B. Mustapha, Z.A. Conway, M.P. Kelly, A. Kolomiets, S.V. Kutsaev, P.N. Ostroumov [ANL, Argonne, USA]
J. Rodnizki [Soreq NRC, Yavne, Israel]

Abstract

We have developed a new design for the 40 MeV/u - 5 mA proton/deuteron SARAF Phase-II Linac. It includes a RFQ, room-temperature bunchers and two types of SC cavities. The new design is based on highly optimized ring-shaped HWR structures operating at 176 MHz, the same frequency as the current SARAF Phase-I linac. We will first present the optimized design of all the components from the RFQ to the SC cavities, then the proposed linac layout, and finally the results of end-to-end beam dynamics simulations including machine errors, realistic corrections and beam loss analysis.

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