COMPACT ACCELERATOR CONCEPT FOR PROTON THERAPY[*]

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Abstract

A new type of compact induction accelerator is under development at the Lawrence Livermore National Laboratory that promises to increase the average accelerating gradient by at least an order of magnitude over that of existing induction machines. The machine is based on the use of high gradient vacuum insulators, advanced dielectric materials and switches and is being developed for a variety of applications. Research describing an extreme variant of this technology aimed at producing a compact, variable output linear accelerator for proton therapy for cancer will be described.