IRRADIATION EFFECTS
IN NUCLEAR ACCELERATORS

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ABSTRACT Questions of irradiation that appears in the nuclear accelerators with superconducting elements are discussed in the paper. The construction of these devices (in which the superconducting electromagnets and current leads are used) is described. An importance of the basic research performed in great research centers basing on example of JINR in Dubna, Russia, are reviewed. It has been considered an influence of the heavy ions irradiation, creating nano-defects, on operation of superconducting wires made from low-dimensional materials: multilayered HTc superconductors and quasi-one dimensional superconductors of A15 type crystal structure. The problems of nano-defects have been also discussed for the case of superconducting cryocable.

Keywords: irradiation effects, HTc superconductors, nuclear accelerators, model of cryocable