



Abstract: " The INFN Experience in Protontherapy: CATANA Facility at Laboratori Nazionali del Sud"  
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At the Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali del Sud (INFN-LNS) in Catania (Italy) the first Italian protontherapy facility, named CATANA (Centro di AdroTerapia e Applicazioni Nucleari Avanzate) has been built in collaboration with the University of Catania. It is based on the use of the proton beam delivered by the Superconducting Cyclotron installed and working at INFN-LNS since 1995. The facility is mainly devoted to the treatment of ocular diseases like uveal melanoma. A beam treatment line in air has been assembled together with a dedicated positioning patient system. The facility is in operation since the beginning of 2002 and 150 patients have been successfully treated up to now. The main features of CATANA together with the clinical and dosimetric features will be extensively described; particularly, the proton beam line, that has been entirely built at LNS, with all its elements, the experimental transversal and depth dose distributions of the proton beam obtained for a final collimator of 25 mm diameter and the experimental depth dose distributions of a modulated proton beam obtained for the same final collimator. Moreover as scientific spin-off we have designed an original superconducting cyclotron able to produce 300 AMeV proton and light ion beams for hadrontherapy applications, nowadays commercialized by IBA.