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RELIABILITY OF THE FACILITY FOR PROTON THERAPY AT THE HELMHOLTZ-ZENTRUM BERLIN

Since 1998, the accelerator complex at the Helmholtz-Zentrum Berlin (HZB), the former Hahn-Meitner-Institut, is employed for proton therapy of ocular melanomas. For this reason, an increase of the up-times of the accelerator, which were in the order of about 90 %, was desirable. Up-grades and refinements were made on all sub-systems: sources, injectors, RF systems, power supplies, and vacuum. Over 10 years, the up-time/availability could be raised from 90 % to more than 95 %.

Until the end of 2006, the use of the accelerator for tumour therapy was only a small part of the overall beam time. Thus, the running of the accelerator for medical purposes was embedded in the operation for solid state physics experiments. The cessation of the physics programme at the end of 2006 had severe consequences: A cooperation contract between the Charité and the HZB assures the continuity of the eye tumour therapy – at the moment still the only facility in Germany – but the boundary conditions changed tremendously. Beam time, and consecutively funds, man-power, and resources were cut-down remarkably. Nevertheless, keeping a high reliability was the fundamental goal. Although major breakdowns, e.g. a water leak in the cyclotron, have a huge impact on the up-time due to the small number of beam time hours, breakdowns over the past years amounted to 5 % or less of the beam time.

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