

The Radiotherapy Clinical Trials Projects at the ESRF: Technical Aspects

M. RENIER, TH. BROCHARD, C. NEMOZ, H. REQUARDT, E. BRÄUER, F. ESTEVE,
P. SUORTTI, J. BARUCHEL, P. BERKVENS, A. BRAVIN

European Synchrotron Radiation Facility. BP 220, 38430 Grenoble Cedex, France.

The Radiotherapy Clinical Trials projects imply several major modifications and new constructions at the ESRF ID17 Biomedical beamline.

The Stereotactic Synchrotron Radiation Therapy (SSRT) application mainly necessitates the modification of the existing patient positioning system formerly used for the angiography program. It will allow for accurate positioning and rotation of the patient during the X-ray treatment.

For the Microbeam Radiation Therapy (MRT) clinical trials project, a new white beam hutch will be constructed to accommodate a dedicated patient positioning system. Consequently, the existing control hutches and the related installations will also be completely refurbished. Furthermore, the foreseen installation of a second wiggler that will allow doubling the currently available photon flux at high energies implies the re-design of most of the optical components to handle the increased power and power densities.

Starting from the current ID17 Biomedical beamline layout, the paper will present an update of the different modification/construction projects and sub-projects, including the general organization and the expected planning.

KEYWORDS: Radiotherapy Clinical Trials Stereotactic Synchrotron Radiation Therapy (SSRT) Microbeam Radiation Therapy (MRT)