Conclusions: The safe use of ultra-high dose rates for significant beam-on times in our research room using existing shielding is possible, but only by restricting access to some surrounding areas.

O027
FLASH Modalities Track (Oral Presentations)
OVERVIEW AND CURRENT STATUS OF THE JOINT RESEARCH PROJECT UHDPULSE: "METROLOGY FOR ADVANCED RADIOTHERAPY USING PARTICLE BEAMS WITH ULTRA-HIGH PULSE DOSE RATES"

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Background and Aims: Dosimetry for FLASH radiotherapy, VHEE radiotherapy as well as for laser-driven beams cause significant metrological challenges due to the ultra-high dose rates and pulsed structure of these beams, in particular for real time measurements with active dosimeters. It is not possible to simply apply existing Codes of Practice available for dosimetry in conventional external radiotherapy here. However, reliable standardized dosimetry is necessary for accurate comparisons in radiobiological experiments, to compare the efficacy of these new radiotherapy techniques and to enable safe clinical application. UHDpulse aims to develop the metrological tools needed for reliable real-time absorbed dose measurements of electron and proton beams with ultra-high dose rate, ultra-high dose per pulse or ultra-short pulse duration.
Methods: Within UHDpulse, primary and secondary absorbed dose standards and reference dosimetry methods are developed, the responses of available state-of-the-art detector systems are characterised, novel and custom-built active dosimetric systems and beam monitoring systems are designed, and methods for relative dosimetry and for the characterization of stray radiation are investigated.
Results: Prototypes of different active dosimetry systems show promising results for real-time dosimetry for particle beams with ultra-high pulse dose rates. The results of the UHDpulse project will be the input data for future Codes of Practice.
Conclusions: A brief overview of the progress in the UHDpulse project and the involved institutions will be given.
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FLASH Modalities Track (Oral Presentations)
ULTRA THIN PLANE-PARALLEL IONIZATION CHAMBERS: EXPANDING THE RANGE OF AIR IONIZATION CHAMBERS INTO ULTRA-HIGH DOSE RATE

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