TITLE: CONCEPT AND METHODOLOGY OF THE PARTICLE THERAPY MASTERCLASS

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ABSTRACT

With the aim to highlight the impact of fundamental research on the broader society the new Particle Therapy MasterClass (PTMC) package was developed and recently integrated into the International MasterClass 2021 (IMC) online programme, attracting some 37 institutes from 20 countries and more than 1500 high-school students. Focusing on the topic of cancer treatment, a particular sensitive topic, the main idea is to show that fundamental properties of particle interactions with matter, which are the basics for detecting them in physics experiments, are also the basis for treating cancer tumours; and that accelerator technology, used in research laboratories, is also used at therapy centres.

For the hands-on session, the open source professional Treatment Planning software matRad is used, developed for research and training by DKFZ, the German cancer research institute, Heidelberg.

Ultimately students are shown "what physics has to do with medicine" and what are the various possibilities that physics and STEM studies may open up for job opportunities in fields that there is lack of expert personnel.