

# Geant4 for proton and heavy ion therapy

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Monte Carlo codes are widely used in proton and carbon ion therapy as tools to verify clinical treatment planning systems, to develop associated quality assurance detectors and also to improve the delivery of the treatment to the patient. We will illustrate the physics capability of Geant4 to perform dosimetry, micro- and nano-dosimetry in the context of proton and heavy for carbon ion therapy, together with its validation against experimental measurements. We will illustrate a variety of potential uses of Geant4 of interest for the proton therapy facility under construction in Adelaide.