

Proton Computed Tomography

Catherine Therese Quiñones, Simon Rit and Jean-Michel Létang, 2014

Proton computed tomography (pCT) has been proposed as a potential tool for an accurate treatment planning in proton therapy. The low entrance dose of protons may be utilized effectively to provide a better contrast resolution than the conventional x-ray CT at a given dose level. This PhD aims to develop new techniques to better characterize tissues and implement new reconstruction algorithms exploiting proton nuclear interactions and other imaging modalities for a superior spatial and density resolution.