

Tumor motion prediction for real-time carbon ion dose calculation

Dienstag, 29. Oktober 2024 10:15 (15 Minuten)

The precision of carbon ion therapy offers great potential for more targeted lung cancer therapy. To use the steep dose gradients to target moving tumors requires motion mitigation strategies that rely on real-time motion information acquired, e.g., with optical tracking systems. To utilize the information most effectively requires to predict motion variations. We developed an LSTM model to be used in conjunction with a real-time dose engine, for detecting issues in the treatment in real time and possibly correcting the dose delivery. The model was verified with experimental data from the Italian carbon ion therapy center CNAO.

Hauptautoren: Herr ABU MUSTAFA, Khaled (GSI Biophysics); VOLZ, Lennart (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI)); Herr GALEONE, Cosimo (GSI Biophysics); DURANTE, Marco (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI)); GRAEFF, Christian (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))

Vortragende(r): VOLZ, Lennart (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))

Sitzung Einordnung: Session