Doctoral (Ph.D.) student in (Medical) Physics (TV-L, 13/2)

Description of the project/position:

The German Cancer Research Center (DKFZ) Heidelberg will host a Ph.D. position in the context of medical imaging research as part of the joint research project *Innovative Methods of Biomedical Imaging for Optimization of Ionizing Radiation Uses in Medicine* of the German Federal Ministry of Education and Research (BMBF). The project will be carried out in close cooperation with the Department of Diagnostic and Interventional Radiology of the University Hospital Heidelberg. The appointment is initially available for a period of 3 years starting as soon as possible after October 1st, 2008; salary is according to TV-L, 13/2.

The aim of the thesis is to design and carry out measurements of radiation exposure of thoracic and abdominal CT examinations in order to minimize patient dose. To this end, effective radiation exposure of standard scan protocols shall be compared quantitatively to radiation exposure of new dose-reduced, 3D dose-modulated as well as weight- and "body-mass"-adapted protocols currently under development. Measured radiation exposure shall be correlated to the scan parameters (e.g. x-ray tube high voltage and current, rotation time, collimation, field-of-view size).
Subsequently, radiation exposure shall be evaluated for 4D- (time-resolved) and dual-energy CT and compared to standard examinations. The results are to be verified in animal experiments and with Monte Carlo simulation.

The successful candidate should hold an academic degree in physics (or an equivalent academic degree in physics-related science) and have a strong interest in medical imaging. A background in medical physics (preferably in the field of computed tomography (CT)), dosimetry and Monte Carlo simulation as well as programming skills (C++) are beneficial.

If you are interested or in case of questions please contact:

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