NETHERLANDS CANCER INSTITUTE
ANTONI VAN LEEUWENHOEK

MSc Physics projects in EPID dosimetry

Your function within the department
Master's project in EPID dosimetry
Radiotherapy uses ionizing radiation to irradiate tumor tissue to a high dose while sparing the surrounding normal healthy tissue as much as possible. To guarantee the safety and quality of a treatment, the dose delivered to a patient has to be verified. Originally designed for patient position verification, Electronic Portal Imagining Devices (EPIDs), provide an elegant solution for dosimetry since they are already available on every treatment machine. At the NKI-AvL we have developed a back-projection model whereby 2D images, acquired with an EPID, are back-projected inside the patient to obtain a 3D dose distribution.

Research in the field of EPID dosimetry focuses on the physics of dose reconstruction; it is an active and unique research area at the interface of (applied) physics and computer science/algorithms. Current research topics include improving the accuracy and verification of our back-projection model for complex radiotherapy treatment types, and gaining a better understanding of the 'extremes' of radiotherapy, i.e. a better understanding of the dose delivered by very small and very large radiation fields.

Is EPID dosimetry at the Antoni van Leeuwenhoek - Netherlands Cancer Institute for me?
It is, if you:

- are looking for a challenging and unique master's project
- would like to conduct research in a multidisciplinary and dynamic environment
- enjoy applying your physical knowledge and skills to improve the quality and safety of radiotherapy treatments
- are a dedicated and motivated worker

Interested?
For further information please contact dr. Patrick J. González, EPID dosimetry physicist, +31(0) 20 512 2538, p.gonzalez@nki.nl or apply online: www.nki.nl