



Contribution ID: 321

Type: Oral Presentation

Simulation of radiography beam collimation using ray tracing method

Tuesday, 30 June 2015 14:40 (20 minutes)

Abstract content ** ** **(Max 300 words)** **
** **Formatting &** **
** **Special chars**

Radiography is a non-destructive analytical technique using a penetrating radiation beam (Neutrons, X-rays or Gamma-rays) as a probe. The technique has found extensive use as a diagnostic probe in medical applications, and also find increasing application scope amongst the scientific community to retrieve qualitative and quantitative information from laboratory scale samples and artifacts in a wide range of research disciplines.

Collimation of the radiation beam has a direct impact on the geometry and the flux of the beam, which in turn affect the quality of the results from the experiments. For the design of an optimal collimator for a given application modelling and simulation is imperative. In this presentation the implementation of a ray tracing method in a radiography simulation to assess and optimise the effect of collimation shall be discussed with emphasis on the benefits in terms of process speed and radiograph quality.

Apply to be **
** **considered for a student** **
** ** ** **award (Yes / No)?**

yes

Level for award **
** ** ** **(Hons, MSc,
** ** ** **PhD, N/A)?**

PhD

Main supervisor (name and email) **
** **and his / her institution**

Prof Andries Engelbrecht
Email:engel@cs.up.ac.za

Would you like to **
** **submit a short paper** **
** **for the Conference** **
** **Proceedings (Yes / No)?**

No

Please indicate whether **
** **this abstract may be** **
** **published online** **
** **(Yes / No)**

Yes

Primary author: Mr NSHIMIRIMANA, Robert (NECSA)

Co-authors: Prof. ENGELBRECHT, Andries (University of Pretoria); Dr NOTHNAGEL, Gawie (Necsa)

Presenter: Mr NSHIMIRIMANA, Robert (NECSA)

Session Classification: Applied

Track Classification: Track F - Applied Physics