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Development of the HARM model for aviation dosimetry

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Commercial aviation space is filled with intense particle radiation that poses a heath risk to the aviation industry. Measurements obtained using dosimetric instruments during commercial aircraft flights have shown that the radiation levels can exceed dosimetric health limits of ground level work places. However, most of these measurements are not conducted routinely and for specific flight routes. Therefore, to characterize and visualize the global radiation exposure of commercial aircraft passengers and flight personnel at aviation altitudes, the High Altitude Radiation Monitor (HARM) model was developed at the North-West University (NWU) ideally for dose accumulation assessment and the implication thereof. The model calculations are based on the temporal top-of-the-atmosphere galactic cosmic-ray spectra and ground-based neutron monitor observations, while a comparison to experimental latitudinal data survey measured with a tissue equivalent proportional counter (TEPC) onboard a commercial flight shows fairly good agreement between model and measurements. In this presentation, I will introduce the HARM model and briefly discuss its development stages and show its preliminary results.

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

No

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

N/A

Primary authors: MOSOTHO, Moshe Godfrey (NORTH-WEST UNIVERSITY); STRAUSS, Du Toit (Centre for Space Research, North-West University); NNDANGANENI, Rendani Rejoyce (South African Space Agency)

Presenter: MOSOTHO, Moshe Godfrey (NORTH-WEST UNIVERSITY)

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