

ICCHIBAN 6, ICCHIBAN NSRL, and 2004 onboard ISS exposures: Czech results

F. Spurný, I. Jadrníčková, K. Turek

*Nuclear Physics Institute, Department of Radiation Dosimetry, Academy of Sciences
of the Czech Republic, CZ-180 00, Prague, Czech Republic*

Tel.: +420 283841772; E-mail: spurny@ujf.cas.cz

The contribution presents an overview of results obtained within the scope of WRMISS interests since the last meeting. Basically passive devices are used: thermoluminescent detectors (TLDs); and polyallyldiglycolcarbonate track etch detectors (PADC TEDs).

On Earth, these detectors were exposed to upgrade their calibration during ICCHIBAN 6 and ICCHIBAN NSRL runs, and at high energy particle beams in JINR, Dubna, Russia. The exposure covered the particles within linear energy transfer (LET) in water between 0.2 and 600 keV/ μm .

Upgraded regressed dependencies of TLD's relative responses on the LET are presented and analyzed. They are used to estimate some ICCHIBAN's blind exposures. New data permitted also to upgrade the calibration curves of PADC TED when used as the spectrometer of LET.

In Space, PADC TED-based LET spectrometer samples were exposed onboard ISS in the period from January to October 2004. The results obtained are presented and discussed. The data obtained are also used to estimate the neutron contribution to dosimetric characteristics of onboard ISS radiation field.

Finally, some remarks on the dependence of microdosimetric distribution on the sensitive volume dimensions are given.