



NEUTRON RADIATION ENVIRONMENT onboard INTERNATIONAL SPACE STATION: CONTINUOUS LONG-TERM OBSERVATIONS with BOARD TELESCOPE of NEUTRONS INSTRUMENT

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We have presented measurements of spectral density of neutron flux onboard the Russian Segment of International Space Station (ISS) performed by Board Telescope of Neutrons (BTN) instrument during continuous observations in 2007-2014 period of time. It has been shown that measured neutron flux in energy range [0.4 eV – 15 MeV] could change by several orders of magnitude between ISS flybys above Earth equatorial latitudes and above South Atlantic Anomaly region starting from values significantly below 1 neutron per cm² per second and going up to tens of neutrons per cm² per second. These estimations were used to restore neutron component of radiation dose onboard ISS and have shown that it can vary from $\sim 0.1 \mu Zv$ per hour (equator) up to more than $50 \mu Zv$ per hour (SAA). Continuous multi-year observations allow us to explore long-term variations of neutron flux due to long-term variations of Galactic Cosmic Rays (GCRs) induced by solar modulation within 24th solar cycle. It was observed (during flybys above high latitude regions) that amplitude of neutron flux has been changed about two times between January 2010 and January 2014.