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Poster
The Atmospheric Ionizing Radiation Tissue Equivalent Dosimeter (AirTED) is a low cost, compact ionizing radiation detector for use aboard aircraft, UAVs, high altitude balloons and suborbital rockets currently being developed at Oklahoma State University with support from NASA SWR2O2R program. The detector consists of a tissue equivalent proportional counter (TEPC) to measure high LET radiation including secondary neutrons, and primary and secondary protons and heavy ions, and a Si PIN Photodiode to measure low LET radiation including x-/gamma-rays, electrons and positrons. Low cost and the use of COTS parts has been prioritized in the design of AirTED in order to ensure that the instrument can be made in relatively large numbers to enable deployment on multiple airborne platforms. A prototype of AirTED has been calibrated using the Los Alamos Neutron Science Center's 30L spallation neutron source that simulates the secondary neutron energy spectrum encountered at aviation altitudes. SpaceTED, a NASA space qualified version of AirTED, is currently operating on the International Space Station. Preliminary results from SpaceTED demostrate that the detector is working as designed. The less expensive AirTED version will soon be deployed on various aircraft including NASA's WB-57 high altitude research aircraft.

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