

FURTHER ACHIEVEMENTS IN SPACE – AND AIRCRAFT EXPOSURE STUDIES AND RELATED TOPICS

Spurný F.

Nuclear Physics Institute – Department of Radiation Dosimetry, Czech Academy of Sciences, Prague

Contribution presents new achievements and tendencies concerning the onboard aircraft and spacecraft dosimetry:

1. Items treated in the relation to aircraft dosimetry:

Overview of international activities in aircraft field topics

ISO documents

WG 21 of ISO TC/85/SC2 issued in April 2006 the 1st part of the norm ISO 20785: “Dosimetry for exposures to cosmic radiation in civilian aircraft. Part 1: Conceptual basis for measurements”. It has been issued in April 2006. As far as the part 2: “Characterization of instrument’s response”, it has been submitted as DIS version for ballot by the end of June 2007

ICRU/ICRP recommendations

TG No. 50 is preparing the recommendations on “Reference doses for cosmic radiation exposure of aircraft crew.” Activities restarted spring 2007, they will be finished at the end of 2008 year

EURADOS activities

Since 1.1.2006 EURADOS and its members have participated on the EC-RTD project CONRAD. This program was closed to the 28th February 2008.

Some selected results for long-haul flights onboard an aircraft of the Czech Airlines

The main task solved since the last our meeting has been related to the comparison of Czech and Japanese MDU-Liulin onboard aircraft, and in the CERN high-energy reference field. Some of results will be presented and discussed.

2. Items treated in the relation onboard spacecraft dosimetry:

International activities in this field going on during 2006-2008 years

Results of common experimental measurements onboard International Space Station (ISS) during 2007 year will be presented. Our detectors have been exposed both in SPD containers as well as in the frame of Space Intercomparison Experiment (SI2), in both cases in the period May – October 2007

Analysis of the simultaneous space- and aircraft measurements 2001-2007 will be also presented. Our onboard aircraft data will be compared with the results of measurements onboard ISS, and FOTON M2 and FOTON M3 satellites.

A brief overview of results obtained in the frame of *ICHIBAN program* since 2006 has been also presented (CERN fields, etc)

3. Plans for future

- a) Individual dosimetry of aircraft crew members will continue, the results obtained during the measuring run performed during 2007-2008 year will be considered.
- b) Since the May 2008 there are several sets of our passive detectors flying onboard ISS in the frame of programs: SI3, WALL, ICCHIBAN CR-39, and Matrjoshka IV. They would return to the Earth at the end of 2008 year, they will be afterwards treated and the results obtained analysed.



SK09K0020