BULGARIAN INSTRUMENTS FOR SPACE RADIATION DOSIMERTY



Aircraft Radiation Exposure:

Typical Dose Values

Prenatal limit < 1 mSv total: < 0.5 mSv anv month</p>

Pilots are classified as radiation workers

One round-trip international = 0.2 mSv (2 chest x-ravs

Radiation worker annual limit < 20 mSv

100k mile flver = 2 mSv (20 chest x-ravs

Solar storm exposures at high-latitude

Chest x-ray = 0.1 millisievert (mSv)

Instant death > 3 Sv

Typical passenger exposur

f radiation dose related to health risk = Sievert (Sv)

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10 years astronaut carrier dose limits of USA

Age (years)	NCRP No. 98 (1989r)		NCRP No. 132 (2000r)		
	Male (Sv)	Female (Sv)	Male (Sv)	Female (Sv)	
25	1.5	1.0	0.7	0.4	-
35	2.2	1.75	1.0	0.6	
45	3.2	2.5	1.5	0.9	
55	4.0	3.0	3.0	1.7	26.

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Introduction



Future space experiments

On going space experiments



Micro-

nterface

Coincidence2

Data and comma

4 Internet instruments worked till now

on the peaks: Jungfrau, Alps; Andoya, Norvey;

Moussala, Rilla and Lomnisky Shtit, Tatri

Dose and flux variations measured with the Instrument

"Lyulin-6MV" at Moussala Peak (2925 m) from 2006 to 2013

CSA3

CSA2

Board supply



Ground, aircraft and balloon experiments

Scientists from following countries used Liulin for measurements on aircraft: Japan, USA, Germany, France, Canada, Spain, Australia, Italy, Korea and others

Altitudinal and latitudinal variations of the atmospheric radiation measured on aircrafts Variations along the path Altitudinal variation

Liulin spectrometers for balloon measurements was used by scientists from: Japan, USA, Germany, France and Check Rep.



Nuclear physics institute, Check academy of sci., Check Republic used most successful Liulin on aircraft

Long term aircraft measurements between 2001 and 2011 at Check airlines aircraft



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