

MATROSHKA-III

Radiation Risk Assessment for Space

Brief description

The exhibit shows the previous flown MATROSHKA facility (2004 – 2011) onboard the International Space Station (ISS). DLR is currently developing the update new MATROSHKA-III facility which will enable new science on-board the ISS from 2021 onwards.

Aims

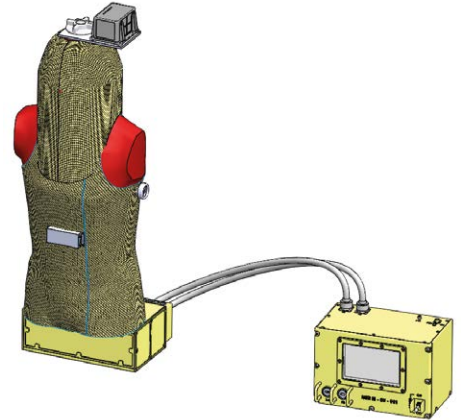
The objective of the MATROSHKA-III (MTR-III) experiment is to extend the measurements performed during the MTR -1 and 2 experiments onboard the ISS (2004 – 2011) in a period of minimal solar activity. The new MTR-III research facility will be equipped with state of the art new developed radiation detectors to perform three – dimensional mapping of the radiation dose inside a human body onboard the ISS as baseline and input for radiation risk assessment for long duration missions.

Applications

- Radiation protection in space
- Radiation detector development
- Radiation risk for astro – and cosmonauts
- Increase knowledge on radiation load on humans in space

Outlook

- Increase the knowledge on radiation risk in preparation for exploration missions
- Increase the Russian – German cooperation in space radiation research



Parties involved

IBMP, Russia; RSC-Energia, Russia; CAU, Germany; NPI, Czech Republic; MTA EK, Hungary; SRTI-BAS, Bulgaria; IFJ-PAN, Poland; CSA, Canada; NIRS, Japan

Facts and figures

The MTR-III experiment aims to measure the depth dose distribution inside a phantom in the Russian part of the ISS. The MTR-III experiment is developed together with international partners, especially IBMP and RSC-Energia and will be launched to the ISS in 2021. It will be the biggest experiment for radiation risk assessment onboard the ISS.

