

Altitude profile of atmospheric radiation in the Arctic region obtained during a scientific balloon flight with MDU-1 Liulin

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Measurements of the natural radiation background, specifically in the upper troposphere and low stratosphere, are important in order to compare and eventually inter-calibrate different experimental set-ups, as well as to provide a reliable basis for improving the existing models related to the environmental radiation in the Earth's atmosphere. Here, we report results from a new zero-pressure stratospheric balloon flight in the frame of the HEMERA-2 mission, obtained by measurements performed with a small portable device, (MDU)-1 Liulin. We derived the altitude profile of the atmospheric radiation in the Arctic region, namely in between estrange Kiruna, Sweden and Rovaniemi, Finland. The preliminary analysis shows a good agreement between the measurements and Oulu models for atmospheric ionization and exposure to radiation.

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