

Time variability of diffuse radiation in the High Tatras

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Abstract: Measurement and registration of the diffuse radiation are systematically carried out at the meteorological observatories of the Geophysical Institute of SAS at Skalnaté Pleso and Stará Lesná, located in the High Tatras. Based on these measurements the influence of the atmospheric boundary layer on the diffuse radiation flux density is studied. The suitable position of the both sites enables to investigate the time and vertical variations of the diffuse radiation in average, as well as in case of clear skies and low clouds. Different altitudes various orographical conditions at both the localities are manifested in the different diffuse radiation sums. The proportion of the diffuse radiation in the global solar radiation was dedicated for the whole part of the solar spectrum. There are not the long-term spectral measurement series of solar radiation.

Key words: diffuse radiation, global solar radiation, monthly, daily and hourly sums of diffuse radiation, atmospheric boundary layer

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