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Short-term variations of the ^7Be wet deposition in the eastern part of the Czech Republic

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^7Be is a natural radioisotope (half-life 53.3 d) produced in cosmic-ray spallation processes on atmospheric nitrogen and oxygen. We sampled individual rain events (September 2013 – March 2014) in a collector (1 m above the roof of the Technical University of Ostrava) and simultaneously collected relevant meteorological data from the station on the same roof. Rain samples were filtered and the ^7Be content in collected water was determined by gamma spectrometry. We studied the correlation between the ^7Be wet deposition and precipitation amount, precipitation intensity, elapsed time between individual rain events, cloud types and the air-born-dust PM10 and PM2.5 concentrations before and after the individual rain events [1] and tested the models proposed in the literature [2,3].

[1] Czech Hydrometeorological Institute, Data sets from the PM10 and PM2.5 monitors in the Moravian-Silesian region.

[2] Caillet S., Arpagaus P., Monna F., Dominik J., J. Environ. Radioact. 53 (2001) 241.

[3] Ayub J.J., di Gregorio D.E., Huck H., Velasco H., Rizzotto M., The Natural Radiation Environment: 8th International Symposium, AIP Conference Proceedings, Vol. 1034 (2008) 107.

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