



Impact of severe summer storms on prediction of rain attenuation at point to multipoint MWS systems

O. Fiser and Z. Sokol

Institute of Atmospheric Physics, ASCR, Prague, Czech Republic

MWS (Microwave wireless systems) is a perspective telecommunications system based on the PMP (point to multipoint) transmissions. MWS enables services like internet access, homebanking, teleteaching etc. Because it uses 42 GHz microwaves propagating through the atmosphere, severe storms significantly influence the quality of telecommunications. Therefore a prediction of rain attenuation occurrence for the given location is necessary. In this contribution we use the C-band radar reflectivity data with the horizontal resolution of 1 km to predict the probability of rain attenuation for the territory of the Czech Republic. We study hypothetical links of the lengths 1, 2, 3, 4 and 5 km at 4 directions (N-S, W-E, NW-SE and NE-SW) and we evaluate conditions when the certain rain attenuation is exceeded at 1, 2, 3 or at all 4 directions. From this information the reliability of the MWS systems can be estimated.