531. Title:Performance analysis of cooperative wireless backhaul networks operating at extremely high frequencies

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Abstract:Extremely high frequency (EHF) bands above 50 GHz have been proposed to be used as backhaul links of modern cellular mobile networks. They provide interconnectivity between the base stations and the core network. In this paper, we propose the employment of cooperative techniques in backhaul networks. More specifically, the outage performance analysis of a simple cooperative diversity system operating at EHF bands is presented. The destination node combines the direct link with the signal received through a regenerative relay using selection combining. A combined statiform and convective model of rainfall rate for the rain attenuation prediction is considered. The correlation properties and the joint statistics among the microwave paths are also calculated. Numerical results present the impact of the geometrical parameters and the climatic conditions on the outage performance.