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**Uplink Practical Capacity and Interference Statistics of WCDMA Cigar-shaped Microcells for Highways in Rural Zones with Non-Uniform Spatial Traffic Distribution and Imperfect Power Control**

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 [Keywords](#)  
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**Abstract:** The capacity (the maximum number of users per sector that the system can support) and the interference statistics (expected value and variance) of sectors composed of cigar-shaped WCDMA microcells are studied. A model of 5 microcells is used to analyze the uplink capacity and interference statistics. The microcells are assumed to exist in rural zone highways. The capacity and the interference statistics of the microcells are studied for different non-uniform spatial traffic distributions. As user density decreases away from the base station, the capacity of the sector increases due to the reduced total power transmitted by the interfering users.

[Scientific Journals Home Page](#) **Key Words:** W-CDMA, uplink capacity, shadowing

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