

# Wireless networks planning: a compact formulation for the base station deployment problem

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**Abstract.** The design of wireless networks consists of determining the optimal positioning of antennas to meet the quality requirements requested by users throughout the territory. We discuss the modeling of this problem and the limitations of the natural formulation when solving real-world problems. We propose a compact reformulation and demonstrate its efficiency on instances derived from simulations of realistic LTE scenarios.

**Keywords:** Wireless network planning; base station deployment; 0-1 linear programming; compact formulation; SINR inequalities