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Power load characteristics of communication base stations

Overview

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Therefore, this paper investigates changes in the instantaneous power consumption of GSM (Global System for Mobile Communications) and UMTS (Universal Mobile Telecommunications System) base stations according to their respective traffic load.

Reference (Yu et al., 2016) analyzes the load characteristics and patterns based on real-time power consumption and power demand, approximating the electrical load of 5 G base stations as a linear function of communication load.

We demonstrate that this model achieves good estimation performance, and it is able to capture the benefits of energy saving when dealing with the complexity of multi-carrier base stations architectures.

Several indices are designed to quantify the characteristics of the PDC and PRC. For the application, we demonstrate how the PDC and PRC will benefit flexible resource planning.

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