General 5G base station power consumption

Should power consumption models be used in 5G networks?
This restricts the potential use of the power models, as their validity and accuracy remain unclear. Future work includes the further development of the power consumption models to form a unified evaluation framework that enables the quantification and optimization of energy consumption and energy efficiency of 5G networks.

Does a balanced dataset improve energy prediction of 5G base stations?
For energy prediction of 5G base stations,this thesis finds that using a more balanced dataset,in terms of the number of samples for each product,has a positive impactfor the ANN and the Gradient Boosted Trees model while the linear regression performs worse.

How can we improve the energy eficiency of 5G networks?
To improve the energy eficiency of 5G networks,it is imperative to develop sophisticated modelsthat accurately reflect the influence of base station (BS) attributes and operational conditions on energy usage.

What should be considered in a 5G network?
The further completion of the map of power models (Fig. 2) and systematization of their features as well as the comparison is also part of the future work. Lastly,the aspects of computing (network function virtualization) and functional split options of the RANneed to be considered for 5G networks as well.

The power consumption of the 5G base station mainly comes from the AU module processing and conversion and high power-consuming high radio frequency signals, the ...

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