

# Green Massive Traffic Offloading for Cyber-Physical Systems over Heterogeneous Cellular Networks

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© 2018, Springer Science+Business Media, LLC, part of Springer Nature. While the number of things is growing accompanied with an explosive increase in wireless traffic, network providers are facing a set of challenges, especially that the massive number of devices are expected to communicate over the current cellular networks. In an attempt to relieve network congestion and increase throughput, we turn toward cell shrinking and offloading, a key technology in future 5G networks. Using this potential solution, we are mainly targeting two important issues: i) enabling cyber-physical systems (CPS) communications over cellular networks to provide CPS with several benefits such as ubiquitous coverage, global connectivity, reliability and security; and ii) offloading a proportion of CPS traffic to small cells, which in turn increases the throughput of macrocells, and frees more network resources to other users. Using stochastic geometry, we present an analysis on CPS offloading rate and achieve