Asignación de Cabezales Radio a Procesadores Banda Base mediante Redes Neuronales de Grafos

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In 5G networks, Cloud-Radio Access Network (C-RAN) architecture divides legacy base stations into Radio Remote Heads (RRH) and Base Band Units (BBU). RRHs transmit and receive radio signals, whereas BBUs process those signals. Thus, BBUs can be centralized in cloud processing centers serving different groups of RRHs. An adequate allocation of RRHs to BBUs is essential to guarantee C-RAN performance. With the latest advances in machine learning, this task can be automatically addressed through supervised learning. This paper proposes a methodology for allocating RRHs to BBUs in heterogeneous cellular networks relying on graph partitioning through a graph neural network. Model performance is assessed over a dataset built with a radio planning tool that implements a realistic Long-Term Evolution (LTE) heterogeneous network. Results have shown that the proposed method improves performance of a patented state-of-the-art tool based on graph partitioning.