

## Co-channel interference mitigation techniques in multi-cell OFDMA Relay-Based Cellular Networks: a survey

### ABSTRACT

Orthogonal Frequency Division Multiplexing Access (OFDMA) technology along with cooperative relay networks are generally described as an appropriate applicant for developed cellular networks because of the improvements to system performance through flexible resource allocation schemes. In these networks interference-aware resource allocation or interference coordination, represents an important role in raising resource utilization as well as enhancing cell throughput. This paper focuses on existing co-channel interference mitigation methods in multi-cell OFDMA Relay Based Cellular Networks (RBCNs). It aims to utilize the advantages of relay stations while reducing the negative effects of introduced interference. This research first presents the general system model scenarios of interference in RBCNs and provides an overview of the problem. It then compares the potential interference scenarios in these systems. Our study examines the techniques based on the frequency reuse factor they use and shows that even by maintaining the frequency reuse at one; we can maximize the system throughput.

**Keyword:** Frequency reuse; Interference; Resource allocation; Throughput