

Self-Healing Solution To Heterogeneous Networks Using CoMP

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Abstract

Self-healing mechanism is one of the three functionalities for self-organizing networks, and it has three major components to be studied by the academic society: fault detection, fault diagnosis and cell outage compensation. In this report, we study the cell outage compensation function of the self-healing mechanism. In a heterogeneous network environment with densely deployed Femto Base Stations (FBSs), we form a resource allocation problem for FBSs and Femto User Equipments (FUEs) operations using Coordinated Multi-Point (CoMP) transmission and reception with joint processing technique. Since the formulated problem is considered as NP hard problem, we propose a heuristic operation scheme to solve the problem. Simulation results show that our proposed operation scheme can improve FUE throughput by up to 30% compared to other solutions, and it can also prevent the system total rate loss from having the same speed of radio resource loss when failures happen.