

## On Virtual Coordination Protocol towards 5G Interference Mitigation: Modelling and Performance Analysis

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**Abstract :** The fifth-generation (5G) wireless systems is featured by extreme densities of cell stations to overcome the higher future demand. Hence, interference management is a crucial challenge in 5G ultra-dense cellular networks. In contrast to the classical inter-cell interference coordination approach, which is no longer fit for the high density of cell-tiers, this paper proposes a novel virtual coordination based on the dynamic common cognitive monitor channel protocol to deal with the inter-cell interference issue. A tractable and flexible model for the coverage probability of a typical user is developed through the use of the stochastic geometry model. The analyses of the performance of the suggested protocol are illustrated both analytically and numerically in terms of coverage probability.

**Keywords :** ultra dense heterogeneous networks, dynamic common channel protocol, cognitive radio, stochastic geometry, coverage probability

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