Algorithms based on simplicial homology for wireless networks: application to energy saving

Mots clés :
- Directeur de thèse : PHILIPPE MARTINS GONCALVES
- Co-encadrant(s) :
- Unité de recherche : Laboratoire Traitement et Communication de l'Information
- Ecole doctorale : École Doctorale Informatique, Télécommunications, Électronique de Paris
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Résumé du projet de recherche (Langue 1)

Energy saving is one of the most investigated problems in wireless networks. In recent years, due to an explosive growth of traffic demand, the more and more energy consumption is needed. The challenge is to maintain reliable service coverage while simultaneously reducing the total energy consumption of the networks. The objective of thesis is to develop algorithms aimed to optimize the total energy consumption at network level while maintaining the coverage constraints. To do that, the global coverage topology of networks should be computed than it could be optimized. Simplicial homology, which allows computing this topology by using only simple matrix calculation, is used as a useful tool in these algorithms.