
SEMINARIO

Alvaro Samperio Valdivieso

Universidad de Valladolid

An iterative algorithm for recovering a sparse electrical network

Abstract: The problem of recovering the topology and cable parameters of an electrical network from power and voltage data at all nodes is a non-negative linear regression problem which is often ill-posed. Even if the data corresponds to an electrical network whose topology is sparse, the topology of the recovered network is usually the complete graph, and thus it is not useful for applications. Therefore, we are interested in recovering a network whose set of edges is minimal among the networks that fit the data up to a given tolerance.

In this talk we present an algorithm that recovers a sparse electrical network with minimal set of edges. The algorithm is iterative and it is based in techniques of spectral graph sparsification by effective resistances. We show several examples of application of the algorithm, in which after few iterations we recover a sparse topology in which cable parameters estimation is well-posed.

**Seminario del IMUVa, edificio LUCIA
Lunes 8 de Julio de 2024 (9:30)**

