Analytical tools for network controllability in the human brain

Résumé du projet de recherche (Langue 1)

This project adopts network science as a key pathway to unfold the brain's complexity and its structural and dynamical connectivity. A special focus will be made on network controllability. This framework integrates principles from network science, complex systems and control theory and is very recent and largely unexplored yet. Therefore, the direction of the PhD project will be to develop this theoretical framework by improving state-of-the-art methods and developing new ones. Specific research axes will be: identification of driver components in complex networks, characterization of healthy brain dynamics through control theory, exploration of different control trajectories and their costs, expand control regimes to nonlinear systems and mapping between networks controllability and topology.