**Summary of *Mapping Human Whole-Brian Structural Networks with Diffusion MRI***

**Goal**

* Understanding the large-scale structural network formed by neurons and to get a detailed connectivity map of entire brain
* Mapping a large, comprehensive and individual white matter connectional datasets of the human and animal brain.

**Method**

Using diffusion MRI of both live and dead human or animal brains

**Introduction**

Problems

* Human brain is too complex to use a graph which consists of neurons and edges to explain.
* Irrelevant imformation from the global organization point of view.
* Granularity graphs are limited to small post-mortem datasets and people lack a large database of human brain

Method

Using a method derived from dMRI tractography which can map network consisting of nodes representing WGM interfaces and weighted edges between.

Advantages

1. a relatively high resolution: not only to study brain connectivity locally but globally

2. non-invasive method: study to topology of living human brain

3. an individual network for the entire brain: different from "average" brain

4. efficient: an hour or less

**Material and Methods**

Methods:

1.diffusion MRI acquisition

2.white matter tractography

3.white matter-gray matter interface partition into Regions Of Interest(ROIs)

4. network construction

**Results and Discussion**

Human brain is a small world but not a scale-free network.