OKACOGNET Schedule 10/10/2012

The activities to de accomplished in the next 3,4 (11/5, 11/12) weeks are as follow:

1. Calculate correlation matrix for ICA analysis for 1 subject. Relate pairs of time series for one subject for each area. Thus, ts(i,j) corr. ts(i,k) where i is subject i, and j,k are two regions. 1≤i ≤ 24, 1≤j,k ≤ 1..20. The time series ts is a real vector with 172 components (1..172)
   1. DMN, and 20 nodes
   2. “Average” to calculate the matrix G\_dmn for 24 subjects
2. Calculate correlation matrix for graph-based analysis using AAL for 1 subject. Relate pairs of time series for one subject for each area. Thus, ts(i,j) corr. ts(i,k) where i is a subject i, and j,k are two regions. 1≤i ≤ 24, 1≤j,k ≤ 1..90. The time series ts is a real vector with 172 components (1..172)
   1. Resting State, 24 subjects, 90 nodes
   2. “Average” to calculate the matrix G\_rs for 24 subjects
3. Study network based properties of the resulting graph for DMN (ICA case) G\_dmn
4. Study network based properties of the resulting graph for RS (graph based case) G\_rs
5. Study if G\_dmn and G\_rs are categories Cat(G\_dmn), Cat(G\_rs)
   1. If so, calculate colimits of Cat(G\_dmn) by visual inspection and Cat(G\_rs) algorithmically. Colimits and other categorical properties will be used as a matric to compare the two networks (DMN and RS)

Dependencies:

1 => 3, 2=> 4, (3,4) =5