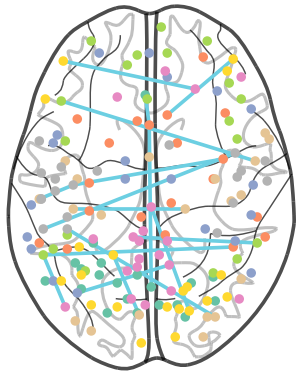
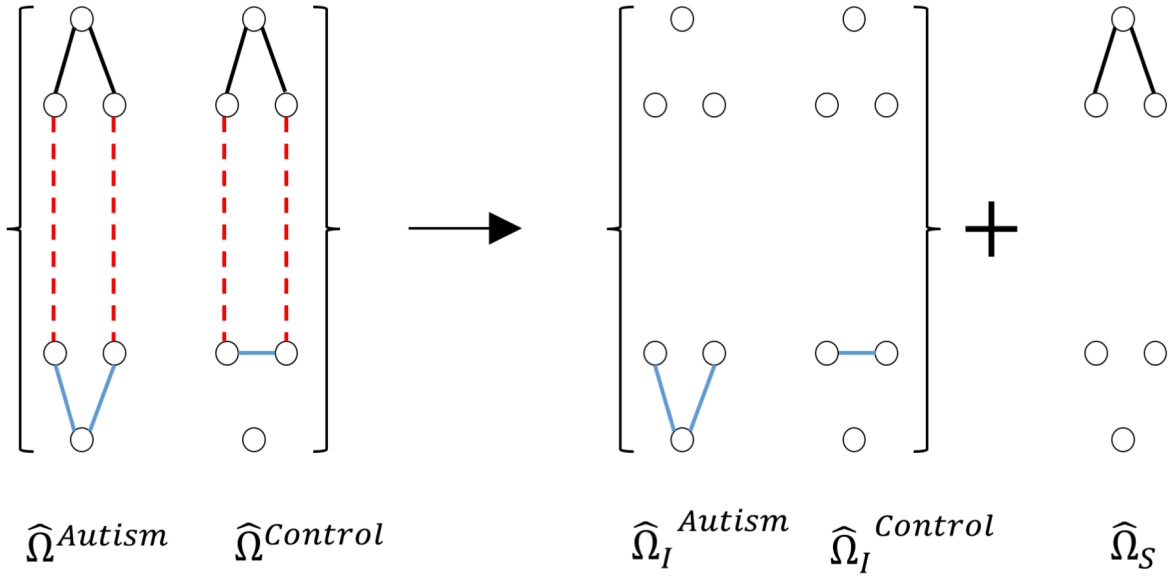
# W-SIMULE: A Constrained, Weighted-$\ell 1$ Minimization Approach for Joint Discovery of Heterogeneous Neural Connectivity Graphs



$$\widehat{\Omega_I}^{(1)}, \ldots, \widehat{\Omega_I}^{(K)}, \widehat{\Omega}_S = \sum_i \text{argmin} \left|\left|W \cdot \Omega_I^{(i)}\right|\right|_1 + \epsilon K \left|\left|W \cdot \Omega_S\right|\right|_1$$

$$\text{Subject to: } \left|\left|\Sigma_N^{(i)} \left(\Omega_I^{(i)} + \Omega_S\right) - I\right|\right|_\infty \leq \lambda, i = 1{:}K$$




1. Sparsity
2. Multi-task learning with *K* groups
3. A prior matrix of positive weights *W*
4. A nonparanormal assumption

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