Example of competing topologies

0. Find best E_k.
a. Recipe for best E_k
Optimal k^{th} critical energy. For E_1 we have seen that the star is optimal. Now if we want to minimize E_k, we need to make E_k as small as possible. b. Example
c. Colormap of E_1 for those topologies// d. Explicit formula to explain intersections.// e. Generally if we consider larger k,N, then we can consider more complicated topologies that have more critical energy intersections. This motivates the idea of using a colormap with a large number of topologies. From analysis of simple topologies we can classify the set of networks that have the same behavior for low energies. The larger the k, the more possible optimal topologies. Interesting behaviors of E_s

a. How to minimize a specific E_k that we are more interested in
b. Which of the possible topologies is the best for a given beta (environmental energy distribution)?
1. Analytically find when p values cross
2. Not reasonable to do this for large numbers of topologies
3.

Looking at small topologies (figure with star and line), we can already see that