

Real systems are often represented by so-called complex networks. These networks have a specific connectivity structure given by the specifics of the studied systems. Since often insufficient or inaccurate data are available, a common approach is to model these systems at the level of this connectivity using random networks replicating specific properties such as ease of connectivity, modularity or specific sparsity. The representation of these properties in basic complex network models is a widely explored area. However, if the presence of edges is controlled by a specific distributions or if an element of the dynamics of the overall graph is added to the model, the analysis of such models becomes more complex. This thesis aims to investigate the properties of such dynamically dependent random models.