

The thesis is about graph partitioning and applications of graph partitioning in parallel algorithms for solving big sparse linear equations. The problem of graph partitioning is thoroughly described and standard graph partitioning algorithms are explained. The application part is focusing on the Conjugate Gradient method preconditioned by a variant of incomplete Cholesky factorization based on drop tolerance. The role of graph partitioning in the problem decomposition is described and a load balancing problem is studied.