University of Kragujevac
Faculty of Science
Department of Mathematics and Informatics

Special Linear Systems

Seminar 2

Mentor:
Prof. dr Tatjana Tomović Mladenović

Student:
Aleksandar Jovanović 5001/2016

It is a basic principle of numerical analysis that structure should be exploited whenever solving a problem. In numerical linear algebra, this translates into an expectation that algorithms for general matrix problems can be directed in the presence of such properties as symmetry, definiteness, and sparsity. This is the central theme of the current article, where our principal aim is to devise special algorithms for computing special variants of the LU factorization. That's why in this article will be presented the LDM^T and LDL^T factorizations, factorizations of positive definite systems, banded systems, symmetric indefinite systems, block systems, Vandermonde systems, and Toeplitz systems.