

Srdečně zveme pracovníky KMD, KAP a další zájemce z řad veřejnosti na přednášku pořádanou v rámci odborného semináře *KO-MIX*

Jacobi (tridiagonal) matrices: Their properties and one possible generalization

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Abstrakt přednášky:

This lecture is mainly focused on the so-called Jacobi matrices, i.e., real symmetric tridiagonal matrices with positive entries on the first (sub- and) superdiagonal(s). We briefly illustrate the connection between tridiagonal and bidiagonal matrices, and the Lanczos tridiagonalization and the Golub–Kahan bidiagonalization algorithms, and their relationship to the general Gram–Schmidt orthogonalization process. We briefly recapitulate some basic properties of Jacobi matrices, in particular, spectral properties and properties of inverses.

Then we introduce the block tridiagonal (and bidiagonal) matrices, and the block variants of the above mentioned algorithms. These algorithms can yield block matrices in a very special forms. We focus particularly on the symmetric (i.e., block tridiagonal) case, when the so-called wedge-shaped matrix is obtained. Analysis of spectral properties of wedge-shaped matrices reveals that these matrices can be considered as a generalization of Jacobi matrices.

Za organizátory semináře srdečně zve

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