

# The closest normal structured matrix

Erna Begović  
University of Zagreb  
ebegovic@fkit.hr

For a given structured matrix  $A \in \mathcal{S}$  we study the problem of finding its closest normal matrix with the same structure, i.e. solving  $\min_{X \in \mathcal{S} \cap \mathcal{N}} \|A - X\|_F^2$ , where  $\mathcal{N}$  is the set of normal matrices. The structures of our interest are: Hamiltonian, skew-Hamiltonian, per-Hermitian, and perskew-Hermitian. We propose a structure-preserving algorithm of the Jacobi type and prove its convergence to the stationary point of the associated objective function.

This is a joint work with Heike Faßbender and Philip Saltenberger (TU Braunschweig).