

Application of singular value decomposition of Jacobi matrix method for power system static stability assessment.

Belov E. I., Sorokin E. V.

The possibility of using of the minimum singular value of the Jacobi matrix as a static voltage stability index is determined. Components of the right singular vector corresponding to the minimum singular value prove to indicate the most critical nodes in terms of static voltage stability. We also analyze the influence of strengthening the power system on static voltage stability margin.

Keywords: Jacobian matrix, minimum singular value, singular value decomposition, static voltage stability.