

SOLVING THE LEAST SQUARES PROBLEM USING THE METHOD OF AN EXTENDED SET OF EQUATIONS WITH SPARSE MATRIX

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The solution of the least squares problem is discussed. The proper least squares problem is formulated and solved using the straightforward projection method (SPM). We propose that it should be reduced to an equivalent problem of solving an extended set of linear equations (ESLE) using the corresponding SPM's modifications. We compare the SPM and the normal equations method in terms of the RAM space utilized and the number of arithmetic operations needed. The use of the methods for the general sparse matrix is discussed and a table of comparative computational efforts is given.

Sparse matrix, extended set, direct projection method, completing

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