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**Fast convergent iterative methods for the computation of weighted pseudoinverse matrices and weighted normal pseudosolutions with singular weights.** (Russian, English) [Zbl 1089.65034](#)  
*Zh. Vychisl. Mat. Mat. Fiz.* 45, No. 10, 1731-1755 (2005); translation in *Comput. Math. Math. Phys.* 45, No. 10, 1667-1690 (2005).

Iteration processes with a speed of convergence orders  $p \geq 2$  for the calculation of weighted pseudoinverse matrices and weighted normal pseudosolutions with degenerate weights are constructed and investigated. Developments of the weighted pseudoinverse matrices in matrix index products which are used for the above mentioned iteration processes are obtained. It is shown that the iteration processes constructed for the weighted normal pseudosolutions can be used for the solution of least squares problems with limitations.

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**MSC:**

[65F20](#) Numerical solutions to overdetermined systems, pseudoinverses

Cited in **9** Documents

**Keywords:**

[pseudoinverse matrix](#); [iterative methods](#); [inverse problems](#); [convergence](#); [weighted normal pseudosolutions](#); [least squares problems](#)

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