APPLICATIONS OF THE MULTI-GRID METHODS FOR THE RESOLVING SOME ELLIPTIC BOUNDARY PROBLEMS IN 2D CASE

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We present the main idea of the complete multi-grid process in three stages: 1. two-grid iteration serving as an illustration preparing for 2. multi-grid method. The improvement of both approaches leads to 3. nested iteration technique. The most interest we give to show the practical implementation of advances mentioned above on some selected elliptic boundary problems in 2D case. Because we take MATHEMATICA® software tool for the computer work, this help us to realize experiments in small framework by choosing always more than one variation of algorithmic technique. Of course quantitative and qualitative comparisons of results we reach, in very quick and efficient way is that what makes MATHEMATICA® so powerful.

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