Operators and Matrices
Volume 5, Number 3 (2011), 409–416

SIGN PRESERVATION PROPERTIES OF SOME NONLINEAR TRANSFORMATIONS

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Abstract. It is shown that the number of sign changes in certain transformations does not increase with each iteration in time. These transformations are composed of linear components defined in terms of totally positive matrices and semi linear components similar to $u \to ku^3$. In particular the analysis shows that for certain semi linear parabolic equations discretized using finite difference methods, the number of sign changes does not increase.

Mathematics subject classification (2010): Primary 47J05; Secondary 47J25, 15A90, 65N06.
Keywords and phrases: Nonlinear transformation, finite difference method, totally positive matrix.

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Paper OaM-05-28