ON DYNAMICS OF QUADRATIC STOCHASTIC OPERATORS: A SURVEY

Akbar Zada and Syed Omar Shah

Abstract. We discuss the notion of Volterra, \(\ell\)-Volterra and separable quadratic stochastic operators defined on \((m - 1)\)-dimensional simplex, where \(\ell \in \{0, 1, \ldots, m\}\). The \(\ell\)-Volterra operator is a Volterra operator if and only if \(\ell = m\). We study the structure of the set of all Volterra and \(\ell\)-Volterra operators and describe their several fixed and periodic points. For \(m = 2\) and \(m = 3\) we describe behavior of trajectories of \((m - 1)\)-Volterra operators. We also mention many remarks with comparisons of \(\ell\)-Volterra operators and Volterra ones. Also we discuss the dynamics of separable quadratic stochastic operators.

Full text

References


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