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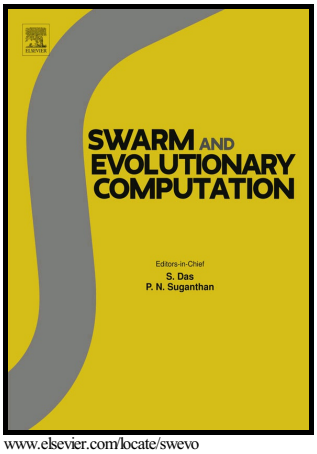

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Abstract Skew Normal (SN) distribution is widely used for modeling data sets having near normal and skew distribution. Maximum likelihood (ML) is the most popular method used to obtain estimators of model parameters. However, likelihood equations do not have explicit solutions in the context of SN. Therefore, we use the Genetic Algorithm (GA) which is a well known search technique inspired by the principles of biological systems, such as evolution, mutation and suchlike, to overcome problems encountered in solving likelihood equations. The GA has routinely high performance where traditional search techniques fail. We compare the efficiencies of ML estimators of model parameters using the GA with corresponding ML estimators obtained using other iterative techniques, such as Newton-Raphson (NR), Nelder Mead (NM), and Iteratively Re-weighting Algorithm (IRA). Simulation results show that ML estimators using the GA of the parameters of SN distribution are the most efficient among others with respect to bias, mean square error (MSE) and deficiency (Def) criteria.

Key words: Skew normal distribution, genetic algorithm, iterative methods, modified maximum likelihood, efficiency

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