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**Saadat Moussavi\*** ([moussavi@uwosh.edu](mailto:moussavi@uwosh.edu)), Mathematics Department, University of Wisconsin, Oshkosh, WI 54901-8631. *Unorthodox Approach to Solve an Overdetermined System.*

An overdetermined system, that is a linear system of equations in which there are more equations than variables, arise naturally from experiments that yield a large number of observations to estimate a few parameters in a mathematical model. The system  $Ax = b$ , where  $A$  is a real  $m$  by  $n$  matrix with  $m > n$  and  $b$  a real  $m$ -vector, represents such a system. Although an overdetermined system typically is inconsistent, values for the variable are needed.

Overdetermined system  $Ax = b$ , can be solved classically in many different ways. This solution, also known as the least-squares solution of the linear system  $Ax = b$ , can be obtained by solving normal equations, using QR-factorization, singular value decomposition or pseudo-inverse. In 1979 Berman and Plemmons suggested to use the well-known "Successive Overrelaxation Method" to solve the large sparse linear least-squares problem. In this paper we develop on this idea. (Received September 20, 2007)