THE COMMUNALITY PROBLEM
FOR
STIELTJES MATRICES

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ABSTRACT

The Communality Problem in Factor Analysis is that of reducing the diagonal elements of a correlation matrix so that the resulting matrix will be positive semidefinite and of minimum rank. The problem is well studied but no effective solution procedures have been devised. In this paper, we propose a variant problem and give an algorithm for its solution. We prove that a solution to this problem also solves the Communality Problem if the correlation matrix is Stieltjes.