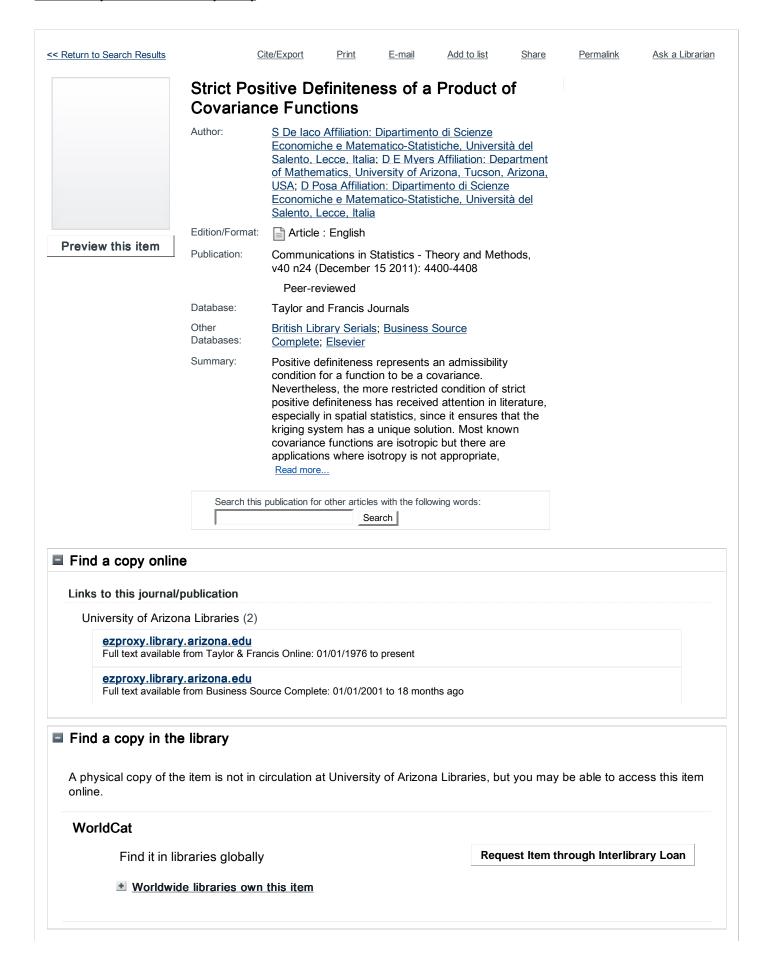
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All Authors / S De laco Affiliation: Dipartimento di Scienze Economiche e Matematico-Statistiche, Università del Contributors:

Salento, Lecce, Italia; D E Myers Affiliation: Department of Mathematics, University of Arizona, Tucson,

Arizona, USA; D Posa Affiliation: Dipartimento di Scienze Economiche e Matematico-Statistiche,

Università del Salento, Lecce, Italia

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Abstract:

Positive definiteness represents an admissibility condition for a function to be a covariance. Nevertheless, the more restricted condition of strict positive definiteness has received attention in literature, especially in spatial statistics, since it ensures that the kriging system has a unique solution. Most known covariance functions are isotropic but there are applications where isotropy is not appropriate, e.g., space-time covariance functions. One way to construct non-isotropic covariance functions is to use a product or a product-sum. In this article, it is given a necessary as well as a sufficient condition for a product of two covariance functions to be strictly positive definite. This result is extended to the well-known product-sum covariance model.

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