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On the use of an inverse shortest paths algorithm for recovering linearly correlated costs

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ON THE USE OF AN INVERSE SHORTEST PATHS
ALGORITHM FOR RECOVERING LINEARLY
CORRELATED COSTS

by D. Burton[†] and Ph.L. Toint[‡]

September 11, 1995

Abstract. This paper considers the inverse shortest paths problem where arc costs are subject to correlation constraints. The motivation for this research arises from applications in traffic modelling and seismic tomography. A new method is proposed for solving this class of problems. It is constructed as a generalization of the algorithm presented in [1] for uncorrelated inverse shortest paths. Preliminary numerical experience with the new method is presented and discussed.

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Keywords : graph theory, shortest paths, inverse problems, quadratic programming, traffic modelling.

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