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出行分布矩阵的极大熵估计法比较研究

Compare of the Estimation Method of Matrix Based on Maximum Entropy Model

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关键词:

交通工程; 极大熵估计; 比较研究; 出行分布矩阵; Transportation Engineering; Maximum Entropy Model Estimation; Comparative Study; Trip Distribution Matrix

摘要:

极大熵方法是用于估计起讫点间出行分布矩阵的一种高效简便的方法。在介绍基础极大熵公式的形式和原理后, 应用Stirling近似公式和对数近似公式简化基本极大熵公式, 得出六个改进的极大熵公式, 在总出行需求固定或可变、先验OD矩阵可行或不可行、节点流连续条件满足或不满足的三种不同的情况下在两个网络上测试七个极大熵公式, 对其特征进行比较。结果表明七个目标函数在寻优时表现出一致性, 但是在一些特定的情况下, 有几个公式产生较大误差, 使得其在实际使用中受到限制。

Maximum Entropy model is an efficient and simple model to estimate origin destination matrix. After introducing the formation and principle of basic maximum entropy model, this article uses Stirling approximate formula and log sum approximate formula to simplify basic model and obtains six improved models. Then it tests seven models in two networks under three different conditions, namely the total demand is fixed or unfixed, the prior matrix is feasible or unfeasible and the node continuity condition is satisfied or unsatisfied and compare the properties of these models. The results show that they show uniform in searching for optimum solutions. However, several formations produce large errors under some circumstances, which restrict their applications in reality.

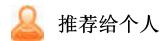
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参考文献

- [1] L. G. Willumsen. Simplified transport models based on traffic counts. *Transportation Research Part B*, 1981, 10(3): 257-278.
- [2] J. Ortuzar, L. G. Willumsen. *Modelling transport*. 3rd Edition, Chichester: Wiley, 2001.
- [3] M. Van Aered, H. Rakha and H. Paramhamsan. Estimation of OD matrices: The relationship between practical and theoretical considerations. *Transportation Research Record No. 1831*, 1831: 122-130.
- [4] 马广英, 李平, 闻育. 基于极大熵模型的交通出行矩阵解法研究[J]. 浙江大学学报(工学版), 2006, 40(10): 1779-1782.
- [5] 周晶, 陈森发, 徐南荣. 均衡交通状态下OD矩阵的估计方法[J]. 信息与控制, 1993, 225(2): 71-82.
- [6] 邵春福. 交通规划原理[M]. 北京: 人民铁道出版社, 2006.
- [7] J. H. Van Zuylen, L. G. Willumsen. The most likely trip matrix estimated from traffic counts. *Transportation Research Part B*, 1980, 14B(3): 281-293.



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