

Support System for Traffic Congestion Measures in Urban Areas by Traffic Assignment Method Combined with Capacity Analysis of Signalized Intersections

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Support System for Traffic Congestion Measures in Urban Areas by Traffic Assignment Method Combined with Capacity Analysis of Signalized Intersections

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06650587

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Grant-in-Aid for General Scientific Research (C)

Allocation Type

Single-year Grants

Research Field

交通工学・国土計画

Research Institution

Kanazawa University

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Keywords

Time-of Day Traffic Assignment Method / Signalized Intersection / Simulation System by Petri-Net Model / Expert Systeme / Transportation Demand Management / Observed Link Flows / Maximum Capacity of Road Network System / Traffic Congestion

Research Abstract

We have proposed a time-of-day traffic assignment model which can predict the hourly traffic volume on each network links and Petri-net Model which is usually used for discrete system simulation. In this study, we have developed two additional system models by using these models. The first system model is combined with capacity analysis of the signalized intersections and obtain the maximum network flow by the slightly modified Incremental Assignment procedure. The system model suggested here is applied to some artificial road networks in order to reveal the properties of the modified model for practical use and to discuss the interrelationships between the road network and land use considering the road network capacity.

The second system model is a support system in order to evaluate the alternative plans of transportation system changes, which are generated by a large site development. The system model consists of four subsystems ; the estimation system of trips generated, the traffic demand estimation system, the determining system of off-street parking capacity and the planning and design support system for improvement signalized intersections by Expert System.

The useful results can be obtained through the applications to Kanazawa urban area and to some artificial road networks.

Research Products (16 results)

All Other

All Publications (16 results)

- [Publications] 高山純一: "エキスパートシステムを用いた信号交差点改良のための設計支援システムの開発" 交通工学研究発表会論文報告集. 第15号. 85-88 (1995) ▼
- [Publications] 木俣 昇: "ペトリネットによる交通流シミュレーションシステムの開発" 土木計画学研究・論文集. 第12号. 691-698 (1995) ▼
- [Publications] Yasunori Iida: "An Analysis of Effect of Dynamic Traffic Information Considering Driver's En-rout Route Switches" Proceedings of the 4th ICAATTE. (印刷中). ▼
- [Publications] Yasunori Iida: "An Evaluation of Parking Guidance and Information System Based on Before/After Analysis" Proceedings of the 4th ICAATTE. (印刷中). ▼
- [Publications] 井上秀行: "信号交差点を組み込んだ時間交通量配分モデルの動的化に関する研究" 都市計画論文集. No.30. 637-642 (1995) ▼
- [Publications] 杉山智美: "交差点分岐比率の変動が観測交通量からのOD推計に及ぼす影響分析" 交通工学研究発表会論文報告集. 第15号. 221-224 (1995) ▼
- [Publications] Jun-ichi Tkayama: "Development of Planning and Design Support System for Improvement Signalized Intersections by Expert System" Proceedings of TRAFFIC ENGINEERING. No.15. 85-88 (1995) ▼
- [Publications] Noboru Kimata: "Development of Traffic Flow Simulation System by Petri-Net Model" Infrastructure Planning Review. No. 12. 691-698 (1995) ▼
- [Publications] Yasunori Iida: "An Analysis of Effect of Dynamic Traffic Information Considering Driver's En-rout Route Switches" Proceedings of the 4th ICAATTE. (in press). ▼
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- [Publications] Tomomi Sugiyama: "A Study on Effect of Change in Branching Probabilities at Intersections on O-D Estimation Model by Observed Link Flows" Proceedings of TRAFFIC ENGINEERING. No.15. 221-224 (1995) ▼
- [Publications] Tsutomu Takeuchi: "An Estimation Method for Unknown Traffic Volume by Means of Correlation Coefficients among Observed Link Flows" Proceedings of TRAFFIC ENGINEERING. No.15. 225-228 (1995) ▼
- [Publications] Moberu Kimata: "Algorism for Heavy Vehicles in Petri-net Simulation System of Traffic Flow" Proceedings of Infrastructure Planning. No.18 (2). 193-196 (1995) ▼

[Publications] Noboru Kimata: "Development of Traffic Simulation System by Petri-net Model and its Practical Application" Proceedings of Infrastructure Planning. No.18 (2). 197-200 (1995) 

[Publications] Jun-ichi Tkayama: "A Study on Decision Method of Intersection Servicen Level and Traffic Regulation Area for Transportation Demand Management" Proceedings of Infrastructure Planning. No.18 (1). 397-400 (1995) 

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