Analisis karakteristik arus Lalu Lintas campuran dengan variasi komposisi kendaraan sepeda motor pada jalan di daerah perkotaan = Analysis of mixed traffic characteristic with a variation of motorcycle composition urban road

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Abstrak

Pada lalu lintas campuran terjadi interaksi antar jenis kendaraan yang berbeda. Komposisi kendaraan mempengaruhi karakteristik lalu lintas. Peningkatan penjualan sepeda motor yang tinggi menyebabkan perubahan pada komposisi lalu lintas yang berdampak pada perubahan karakteristik lalu lintas. Pengumpulan data pada lokasi yang sesuai kriteria dengan panjang segmen 50 meter melalui rekaman video di peroleh data volume lalu lintas dengan rekapitulasi dalam interval 1 menit dan rata-rata kecepatan lalu lintasnya. Dengan menggunakan model Greenshield, Underwood dan Greenberg dianalisis hubungan Arus - Kecepatan - Kepadatan pada 4 kelas persentase Sepeda Motor, berdasarkan sebaran frekuensi persentase sepeda motor.
Hasil analisis dengan ketiga model menunjukan bahwa nilai kecepatan arus bebas (Uf), kepadatan macet (Kj), Kecepatan Optimum (Uo), Kepadatan Optimum (Ko) dan Arus maksimum (Qmaks) tiap kelas persentase sepeda motor terdapat perbedaan, yang menunjukan adanya pengaruh persentase sepeda motor terhadap karakteristik lalu lintas campuran. Dengan menggunakan analisis regresi nilai arus maksimum dan derajat kejenuhan dianalisis hubungannya dengan persentase sepeda motor. Diperoleh hubungan yang sangat erat yang ditunjukan dengan nilai koefisien determinasi (R2) dari hubungan tersebut mendekati 1.
.....Vehicle composition on mixed traffic affect the characteristic of traffic flow. In Indonesia typically traffic composition consist of 60%, 8% and 32% for light vehicle, heavy vehicle and motorcycle respectively. A high increasing of the motorcycle sale cause a change of traffic flow composition.
The Location research are some of urban road which is passed through by a high composition of motorcycle. By performing data collection on a road with 50 meters segmen length using video recorder have been obtained traffic flow data, average speed and density of traffic flow in a minute interval survey. And then, by using traffic flow relationship model, i.e. Greenshiled, Underwood and Greenberg, the relationship of Traffic Flow -Speed - Density could be analyzed for 4 (four) classes of motorcycle percentage on flow of traffic based on the distribution of percentage frequency of motorcycle.
The results of analysis with the three models indicate that the free flow speed (Uf), stuck density (Kj), optimum speed (Uo), optimum density (Ko) and maximum flow (Qmax) for each class percentage of motorcycles are different.
The results show that there are a significant influence of composition (percentage) of motorcycles on a traffic flow toward the characteristics of mixed traffic. By Using a regression technique, the relationship between the percentage of motorcycles and the maximum flow value and degree of density can be analyzed. There are a significant relationship showed by the coefficient of determination (R2) of the relationship are closed to the value of 1.