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Traffic Fluxes and Urban Congestion: A Simple Approach with the *Attractors*' Method

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ABSTRACT

Situations of heavy and congested traffic in urban areas have been analysed by using a statistical approach based on both the identification of specific locations that attract drivers in a multipoint-to-multipoint traffic structure and their classification (attractor's value) as a function of the number of people visiting them by car in different time ranges. By using a Kernel Density Estimation (KDE) function, attractors' distribution density values have been estimated and then integrated with nodal and critical traffic points and traffic density in a "congestion" map. Finally, cross-comparing congestion values with the location of buildings, the road network and the Corine Land Use/Land Cover environmental classification, a "Quality of Life" map has been generated. The authors use this term because the congestion of traffic flows, with all the problems that it entails (such as long travel time, air and acoustic pollution, and so on) is a good indicator of the quality of life, especially in small towns. Results show that this type of "off-line" analysis would allow administrators to identify, quickly and at low cost, areas where citizens' quality of life is most affected by traffic noise and jumps and, hence, to focus costly ground measurements and interventions primarily there.

KEYWORDS

GIS; Traffic; Land Use; Attractors

Cite this paper

E. Loret, G. Gullotta, M. Fea and F. Sarti, "Traffic Fluxes and Urban Congestion: A Simple Approach with the *Attractors*' Method," *Journal of Geographic Information System*, Vol. 4 No. 6, 2012, pp. 494-502. doi: 10.4236/jgis.2012.46054.

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