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Urban vehicular traffic: Fitting the data with a hybrid stochastic model. Part II

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***Highlights (for review)**

- This Part II of our research makes use of the formal theory discussed in a concomitantly submitted manuscript with title *Modeling vehicular traffic networks. Part I.*
- The theory of stochastic matrices is adapted to describe the vehicular traffic flow evolution within a network.
- The empirical collected data come from a sector of the city of Tigre, localized in the province of Buenos Aires, Argentina.
- We observed that the traffic flow can be described by a hybrid model, a blend of model 2 (linear) and model 3 (nonlinear), as developed in Part I. We compare our model, numerically, with the data.
- Based on results from the hybrid model we proposed changes in the already established set of urban traffic rules in order to optimize the vehicular flow and to diminish the average time that a vehicle stays idle at the semaphores.
- We estimate that the goals were achieved satisfactorily as we found that the model fits adequately within the margins of the experimental errors.
- We believe that, jointly, both papers, I and II, will have a positive impact within the literature.