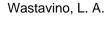# Modeling traffic on crossroads

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A simplified traffic model is studied, consisting of two vehicles traveling through a sequence of crossroads regulated by yield signs. A car approaching a yield sign stops if, in the other street, there is a car closer than a certain distance xtol from the intersection. It is shown that the function which maps the state of the vehicles displays a period doubling transition to chaos. An interesting feature of the dynamics is that for extremely cautious drivers (xtol too large), the map turns chaotic, thus becoming a potential source of emergent jams. Complex behavior such as the one observed in this simple system seems to be an essential ingredient in traffic patterns, and could be of relevance in studying actual crossroads situations.