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A traffic flow model and the self-excitation property of accidents

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We present a traffic model given by a hyperbolic conservation law. Traffic accidents are introduced by spatial discontinuities in the flux functions. The generation of accidents depends on the traffic situation and takes into account the self-excitation property of accidents. We show that under some assumptions we can guarantee the existence of a weak solution and also present conditions on the well-posedness for the accident process. Numerical investigations evaluating the traffic performances conclude the discussion.

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