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Modeling and analyses for an extended car-following model accounting for drivers' situation awareness from cyber physical perspective

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Highlights

1. An extended car-following model accounting for situation awareness is proposed.
2. Linear stability criteria are obtained and nonlinear analysis is executed to derive mKdV equation employing the reductive perturbation method.
3. Drivers' situation awareness plays a key role in traffic flow oscillations and the congestion transition.

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