

Homogenization of a 1D pursuit law with delay

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Abstract

We consider a one dimensional pursuit law with delay which is derived from traffic flow modelling. It takes the form of an infinite system of first order coupled delayed equations. Each equation describes the motion of a driver who interacts with the preceding one, taking into account his reaction time. We derive a macroscopic model by an homogenization process for reaction times that are below an explicit threshold. The key idea is to prove a strict comparison principle for the infinite system.

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References

- [1] J. FIROZALY, *Homogenization of a 1D pursuit law with delay*, arXiv preprint arXiv:1601.02507 (2016).