

# **Conservation laws with point constraints on the flow and their applications**

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Abstract:

In the first part of the talk we show the stability results obtained for constrained conservation laws. We start by considering the simplest case of a scalar conservation law with a local point constraint. Then we consider the non-local case and finally the case of a 2x2 system of conservation laws.

In the second part of the talk we highlight everyday real life experiences that require the theoretical set up of constrained conservation laws. We show then how to apply this theory to vehicular traffics and crowd dynamics. In particular, we show how it is possible to reproduce counter-intuitive phenomena such as Braess's paradox, faster is slower effect, capacity drop.