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Mohamed H Amsaad* (mamsaad@math.wvu.edu), West Virginia University. *Well-defined Lagrangian flows for absolutely continuous curves of probabilities on the real line.*

In this talk I will present some results of analyzing the Lagrangian description of absolutely continuous curves of probability measures on the real line, which are mainly from my joint work with A. Tudorascu of West Virginia University. Whereas each such curve admits a Lagrangian description as a well-defined flow of its velocity field, further conditions on the curve and/or its velocity are necessary for uniqueness. We identify some of such conditions that ensure that the only flow map associated to the curve consists of a time-independent rearrangement of the generalized inverses of the cumulative distribution functions of the measures on the curve. At the same time, our method of proof yield uniqueness within a certain class for the curve associated to a given velocity, i.e. they provide uniqueness for the solution of the continuity equation within a certain class of curves. (Received September 06, 2014)