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**Mohamed H Amsaad\*** ([mamsaad@math.wvu.edu](mailto:mamsaad@math.wvu.edu)). *On continuous case of the Lagrangian description of absolutely continuous curves in the Wasserstein space on the line.*

The Lagrangian description of absolutely continuous curves of probability measures on the real line is analyzed in the case of continuous densities and velocities, which is 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 the joint continuity in time-space of the velocity field that ensures that the continuity equation has unique solution within a reasonably general class of solutions whose density is jointly continuous in time-space. Also, we obtain concomitantly from our method of proof 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, i.e. uniqueness of the Lagrangian description of such jointly continuous solutions may also be a consequence of some continuity enjoyed by the densities in time-space. (Received January 20, 2015)