Singular initial data for the Landau equation with Coulomb potential

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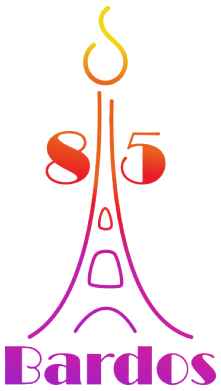
We present a work done in collaboration with William Golding, Maria Pia Gualdani and Amélie Loher, in which we show that for any initial data having finite mass, entropy and a sufficient number of L^1 moments, there exists a weak solution of the (spatially homogeneous) Landau equation (with Coulomb potential) with finite Fisher information for arbitrary small time. Using the result by Nestor Guillen and Luis Silvestre on the decay of the Fisher information for solutions of this equation, we obtain that our weak solution is in fact strong on any time interval starting from a strictly positive time. Our approach consists in gathering already existing estimates (or variants of these estimates) used in the past for the Landau equation. Note that a different approach for a similar result, based on a careful study of the Fisher information, was proposed by Sehyun Ji.



In honor of Claude Bardos's 85th birthday