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**Christopher Henderson** ([henderson@math.uchicago.edu](mailto:henderson@math.uchicago.edu)) and **Stanley Snelson\***,  
Department of Mathematical Sciences, Florida Institute of Technology, 150 W. University Blvd,  
Melbourne, FL 32901. *C<sup>∞</sup> smoothing for weak solutions of the inhomogeneous Landau equation.*

We consider the spatially inhomogeneous Landau equation with initial data that is bounded by a Gaussian in the velocity variable. In the case of moderately soft potentials, we show that weak solutions immediately become smooth, and remain smooth as long as the mass, energy, and entropy densities remain under control. For very soft potentials, we obtain the same conclusion with the additional assumption that a sufficiently high moment of the solution in the velocity variable remains bounded. Our proof relies on the iteration of local Schauder-type estimates. Joint work with Christopher Henderson. (Received July 30, 2017)