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Nestor D Guillen* (nguillen@math.umass.edu), University of Massachusetts, Amherst, MA 01002, and Maria Gualdani. Remarks on radial solutions to the homogeneous Landau equation with Coulomb potential.

We obtain pointwise upper bounds for radially symmetric and monotone solutions to the homogeneous Landau equation with Coulomb potential. Roughly speaking, the estimates say that blow up in the L^{∞} -norm at time T can occur only if the local $L^{3/2}$ -norm of the solution divided by its Newtonian potential blows up. The bounds are obtained using the comparison principle for the Landau equation and for the associated mass function. This method does not go as far as preventing blow for the Landau equation, but it does achieve this much for the isotropic version of the Landau equation with Coulomb potential, recently introduced by Krieger and Strain. (Received January 19, 2015)