DK Seminar

March 9, 2015, 14:15 - 15:00
Vienna University of Technology,
Freihaus, green area, 4th floor, 101C

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Estimates for Radial Solutions of The Homogeneous Landau Equation with Coulomb Potential

Motivated by the question of existence of global solutions, we present recent results on upper bounds for radially symmetric and monotone solutions to the homogeneous Landau equation with Coulomb potential. The estimates say that blow up in the norm at some finite time T occurs only if a certain quotient involving f and its Newtonian potential concentrates near zero, which implies blow up in more standard norms, such as the norm. The bounds are obtained using the comparison principle both for the Landau equation and for the associated mass function. In particular, the method provides long-time existence results for a isotropic version of the Landau equation with Coulomb potential, recently introduced by Krieger and Strain. This is a joint work with Nestor Guillen.