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Joshua Ballew and **Gautam Iyer*** (gautam@math.cmu.edu), Dept of Math. Sci, WEH #6113, Carnegie Mellon University, Pittsburgh, PA 15213, and **Robert L Pego**. *Bose-Einstein condensation in a Kompaneets model for low density plasmas.*

In low density (or high temperature) plasmas, Compton scattering is the dominant process responsible for energy transport. Kompaneets '56 derived a non-linear degenerate parabolic equation for the photon energy distribution. In this talk we consider a simplified model obtained by neglecting diffusion of the photon number density. The equation now becomes a nonlinear hyperbolic PDE with a position dependent flux for which we completely describe the dynamics. While the total number of photons are formally conserved, we show that they will decrease in certain situations through an out flux of photons with 0 energy. This corresponds to the formation of a Bose-Einstein condensate. Further, we find an infinite family of non-trivial stationary solutions which the system approaches after long time. This is joint work with J. Ballew and R. L. Pego. (Received September 20, 2015)