Fermion distribution in hot and dense media and applications to astrophysics R.M. SATISH, ROBERT GEDIES, SAMINA MASOOD, University of Houston Clear Lake — Properties of fermions with the relativistic energies are determined by the Fermi-Dirac distribution in a hot and dense medium. It has been noticed that the energy integration of the distribution function always give a set of functions, identified by Masood in different limits of temperatures and chemical potentials. In this situation we study the behavior of Masood's a_i functions in different statistical backgrounds which are relevant to physical systems such as the early universe or the stellar interiors. We mainly focus on the study of the early universe at high temperatures and the highly dense systems of compact stars such as supernovae and neutron stars.

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