Pairing in Non-Fermi Liquids in Terms of Bethe-Salpeter Equation YURIY MALOZOVSKY, JD Duz Institute for Superconductivity, J.D. FAN, Southern University — The pairing between two fermionic excitations in a non-Fermi liquid is considered in terms of the Bethe-Salpeter equation. We consider the pairing in the Fermi systems with vanishing spectral weight. It is well known that the quasiparticle pole in the single-particle Green's function in non-Fermi liquids is absent or weak. The examples of such systems can be viewed as the "Marginal" Fermi liquid and Luttinger liquid. Another example that has also been considered is the Fermi system with pseudogap behavior in the spectral weight. Although the pairing between two excitations in non-Fermi liquids is, in general, absent, yet we show that the Cooper's type pairing can occur and the conditions for such pairing are discussed. The results have also application to the systems with smeared or non-monotonic Fermi distribution. The system that transits from the Fermi type to Bose type behavior can be a showcase of such systems as discussed.

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