Spin-Wave Excitations and Superconductivity

YURIY MALOZOVSKY, Southeastern Louisiana University, J.D. FAN, JD Duz (USA)-CQU Institute for Superconductivity, Chongqing University, Chongqing, China and Southern University, Baton Rouge, Louisiana, USA — We study in terms of the effective two-particles $T$-matrix pairing by exchanging spin-wave excitations near the ferromagnetic or antiferromagnetic instability. We show that near the ferromagnetic instability the pairing due to the exchange the paramagnetic excitations can occur in the $p$-wave state ($\ell = 1$) and $m = \pm 1$. We show that near the antiferromagnetic instability the pairing due the exchange the paramagnetic excitations occurs also in the $p$-wave state ($\ell = 1$) but with $m = 0$ and that there is no pairing in $d$-wave state.