Fluctuation of Valley Density Wave in Iron Pnictides\textsuperscript{1} JIAN KANG, ZLATKO TESANOVIC\textsuperscript{2}, Institute for Quantum Matter and Department of Physics and Astronomy, The Johns Hopkins University, Baltimore, MD 21218 — We studied the fluctuations within the $U(n)^*U(n)$ \textsuperscript{[1]} theory, which was developed to explain the magnetic and structural transitions in the parent compound of iron pnictides. The self-energy of the fermion contains singularity in low energy scale. It behaves similar to marginal Fermi liquid theory and depends on $n$. The optical conductivity and spin lattice relaxation time are calculated and compared with some experiment on “pseudogap” in iron pnictides. More experiments are proposed to provide a direct view our $U(4)^*U(4)$ theory being assembled as one moves from low to high energies.


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