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Fluctuation of Valley Density Wave in Iron Pnictides[1] JIAN KANG, ZLATKO TESANOVIC[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) [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.

[1] J. Kang and Z. Tesanovic, Phys. Rev. B 83, 020505(R) (2011).

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[2]deceased

Jian Kang
Institute for Quantum Matter and Dept of Physics and Astronomy,
The Johns Hopkins University, Baltimore, MD 21218

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