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On the magnetic fluctuations and unconventional superconducting pairing in iron pnictides[1] JUNHUA ZHANG, RASTKO SKNEPNEK, JOERG SCHMALIAN, Ames Laboratory and Department of Physics and Astronomy, Iowa State University — We explore the role played by spin and density fluctuations in the FeAs based superconductors using the fluctuation-exchange (FLEX) approach. We calculate the superconducting transition temperature and the fluctuation induced pairing gap. In order to compare with experiments, we evaluate the change of the penetration depth with temperature and the evolution of the order parameter. Because of the multi-band feature in this type of material, the interplay between intra- and inter-band fluctuations gives rise to rich physics.

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