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Elastic neutron scattering on Co-doped NaFeAs superconductors CHENGLIN ZHANG, GUOTAI TAN, YU SONG, TUCKER NETHERTON, SCOTT CARR, Univ of Tennessee, Physics dept, WEI TIAN, Oak Ridge National Lab, PENGCHENG DAI, Univ of Tennessee, Physics dept, UTK TEAM, ORNL COLLABORATION — NaFeAs and LiFeAs are the only two members in the Pnictide superconductors 111 family. Without doping, NaFeAs shows filamentary superconductivity coexisting with static antiferromagnetic (AF) order .In addition to the superconducting transition at 9 K, structural and AF transitions appear at $\sim$50 K and $\sim$ 40 K, respectively. By gradually doping Co on Fe sites, the AF order is suppressed and bulk superconductivity occurs. Although the electronic phase diagram of Co-doped NaFeAs is similar to the phase diagram of Co-doped 122 family, the NaFeAs system is much simpler because it does not have strong c-axis magnetic coupling and therefore a detailed investigation of this system will shed new light to our understanding on the common features amongst different classes of Fe-based superconductors. We will report our elastic neutron scattering results about this system.

[X] Prefer Oral Session
[ ] Prefer Poster Session

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