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Noise measurements of high temperature superconductor twin boundary junctions LI XIANG, FANG XU, LIANG LIU, JIAN WEI, Peking University — Doubled shot noise is considered as a proof of Cooper pair tunnelling through Superconductor-Normal metal junctions. For high temperature superconductor this doubling of shot noise has yet to be observed. More interestingly, in the so called pseudogap regime, observation of doubling of shot noise can provide direct evidence of preformed Cooper pairs in the normal state. As a preliminary study, we measure the noises of single and serial of twin boundary junctions and analyse their second and third order spectra (bispectrum). The separation of low frequency noise, thermal noise, and possibly shot noise is discussed in detail.

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