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Magnetic and superconductivity structures near the twin boundaries in low doped Fe-pnictides BO LI, JIAN LI, KEVIN BASSLER, CHIN-SEN TING, University of Houston — The spatial distributions of the magnetic, superconducting (SC) and charge orders near twin boundaries (TBs) in slightly electron-doped Ba(Ca)(FeAs)₂ superconductors are investigated. Two different types of TBs, which respectively correspond to the 90-degree lattice rotation and asymmetrically placement of As atoms, are considered. We find that the domain walls, which spatially separate different magnetic regions, can be formed under a relatively small Coulomb interaction due to the existence of TBs. We show that the SC is enhanced on the TBs of the first type, while on the TBs of the second type, the SC is always suppressed.

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