

## S1-2.7

# Superconductivity, Weak Magnetism, and Quantum Transport of $\text{Bi}_{1-x}\text{Sb}_x$ ( $0.07 \leq x \leq 0.2$ ) Crystallite Structures with Nano-width Interfaces and an Increased Degree of Imperfection

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The weak magnetism, superconductivity, and quantum oscillations phenomena in  $\text{Bi}_{1-x}\text{Sb}_x$  ( $0 \leq x \leq 0.2$ ) crystallite structures with nano-width multilayer interfaces have been studied. We found that the Dirac charge carriers in interface layers are much heavier than in the bulk crystallites, the high imperfection at interfaces has a significant influence on carrier scattering, which predetermines the manifestation of various anomalies of electronic magneto-transport. One or two superconducting transitions with  $T_c \leq 21$  K were detected in all structures, some of them also showed weak ferromagnetism, while others with a rather high content of imperfections and two superconducting transitions exhibit dual superimposed ferromagnetic and superconducting hysteresis loops, indicating simultaneously coexistence of superconductivity and weak ferromagnetism.