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Image processing of scanning SQUID microscope for observing superconducting nanostructures MASAHIKO HAYASHI, Akita University, HO THANH HUY, TAKEKAZU ISHIDA, Osaka Prefecture University — A newly developed image processing technique for the scanning superconducting quantum interference device (SQUID) microscope is presented and its application to several measurements on superconducting nanostructures, including networks and dots, is discussed. This method is based on the detailed analysis of the structures characteristic to the measurement apparatus, such as the shape and position of the pickup coil. We take account of the Meissner effect in the coil body and its influences on the obtained image are carefully removed. The separation between the coil and the sample is also considered. Actually applying this method, we present images of the superconducting networks and dots, which show clear improvement from the raw images. The results are also discussed from physical point of view.

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