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Three-dimensional reconstruction of polycrystals using a series of EBSD maps obtained from Dual-beam experiments

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Dual-beam experiments (Focused ion beam - Orientation mapping microstructure, FIB-OIM) is a widely used experimental tool because this experiments tool available alternates between automated serial sectioning and EBSD with the help of dual beams. We investigated the reconstruction procedure for analysis tool which three-dimensional internal microstructure using Ni superalloy(IN100) and ZrO₂. As a results, we observed annealing twin boundary each layer in Ni superalloy(IN100) and fairly isotropic internal microstructure in ZrO₂ using marching cubes algorithm. According to these results, this procedure is reconstructed well and we gained ability to arrange the EBSD map and internal microstructure.

Keywords: EBSD; FIB-OIM; reconstruction;