

Combined X-ray rocking curve and EBSD study of plastically deformed copper single crystals

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X-ray and electron backscatter diffraction have been applied to investigate misorientation distributions in copper single crystals plastically deformed in single and multiple slip. The misorientation distributions are represented by "rocking curves" about specific rotation axes.

Very good agreement for the rocking curves established by both methods was obtained despite the large difference between their resolution depths.

Following this agreement, a new rotation-axis imaging scheme, based on the EBSD data, is proposed to visualize the crystallite blocks and characterize the nature of their dislocation boundaries.