

Annealing kinetics of latent particle tracks in Durango apatite

Afra B, Lang M, Rodriguez MD, Zhang J, Giulian R, Kirby N, Ewing RC, Trautmann C, Toulemonde M, Kluth P
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Using synchrotron small-angle x-ray scattering we determine the "latent" track morphology and the track annealing kinetics in the Durango apatite. The latter, measured during ex situ and in situ annealing experiments, suggests structural relaxation followed by recrystallization of the damaged material. The resolution of fractions of a nanometer with which the track radii are determined, as well as the nondestructive, artefact-free measurement methodology shown here, provides an effective means for in-depth studies of ion-track formation in natural minerals under a wide variety of geological conditions.