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Fission Track Stability of Alpine Micas

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SUMMARY

Fission track age determinations on mica samples from the European Alps have been giving anomalously low values. In an effort to find the reason for these low ages, annealing experiments have been performed. Previous experiments on the annealing characteristics of fission tracks in mica have been done only in the dry state, usually in a room atmosphere. The experiments reported here are on muscovite using various water pressures (0.5 to 2. kb) and temperatures. The initial results indicate that fission track annealing is affected by relatively low water pressures giving lower annealing temperatures than in dry systems. For instance, at 0.5 kb water pressure almost ten times as many tracks are annealed out as in a room atmosphere (400 °C, 5 hrs.). Comprehensive experiments are in progress to more closely define the extent of annealing of tracks in minerals under water pressure.