Microstructural and texture analysis of antitaxial fibrous veins – first results

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Fibrous microstructures in syntectonic veins are a unique tool to deduce the opening history of the surrounding rock, because fibre grain boundaries are assumed to track the opening direction (Grigorev 1961). The formation of such structures (crack-seal vs. dissolution-precipitation; Ramsay 1980, Bons and Jessell 1997) and transport mechanism of material flux (diffusion vs. advection) is still under discussion. There is also little knowledge about the microstructures themself (Mügge 1928, Grigorev 1961). This study presents texture analysis of calcite in antitaxial veins using SEM-EBSD (Fig. 1). Results will be compared with microstructures from optical microscopy and cathodoluminescence. Finally we will discuss vein formation in terms of conditions at the site of accretion.

Fig. 1. Weak textures in two veins of antitaxial calcite fibres from Paleozoic slates (New York State).

References
Mügge O (1928) Neues Jahrbuch für Mineralogie, Geologie und Paläontologie 88A: 331-400.