Geophysical Research Abstracts
Vol. 18, EGU2016-659-1, 2016
EGU General Assembly 2016


# The influence of the Dauphine twinning in the development of quartz ribbons

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The quartz ribbons are single crystals or polycrystals of elongated quartz. The studied ribbons belong to a strike-slip shear zone, with approximately 1000 km long, located in southeastern Brazil. These structures are found in gneissic rocks formed under conditions of high temperature (680-750 °C) and low pressure (5-7 kbar). The aim of this study is to analyze and evaluate the ribbon microstructures, especially Dauphiné twins, consisting of a rotation of 60 degrees around the c-axis of the original crystal. All crystallographic orientation informations were obtained by EBSD technique (Electron Backscatter Diffraction). It was observed that the c-axis of most ribbons is oblique to the plane of foliation (XZ), suggesting a contribution of crystal slip along some rhombohedral planes during deformation. In addition, a misorientation maximum of 60 degrees in the misorientation angle distribution of quartz can be described and is interpreted as a twinning after Dauphiné law. From all crystallographic analyzes we conclude that, as the load is applied in the rock the quartz ribbons deform to stabilize and absorb the applied stress, thereby developing a complex array of Dauphiné twinning.