OMPHACITE CRYSTALLOGRAPHIC PREFERRED ORIENTATIONS FROM ECLOGITES OF THE TYPE LOCALITY

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Crystallographic Preferred Orientations (CPOs, textures) of omphacite within eclogites from the Koralm-Saualm Complex were analysed in order to constrain the deformation conditions during and after high-pressure metamorphism. The omphacite CPO bear significant details for the reconstruction of the deformational evolution of this unit.

The omphacite crystallographic preferred orientations from the Koralm-Saualm Complex may generally be described by S-type fabrics. Within coarse-grained samples the {001} poles are distributed along a girdle parallel to the XY plane of the finite strain ellipsoide (foliation plane). These textures show {001} maxima near the Y- axis of the finite strain ellipsoide, *i.e.* perpendicular to the lineation, but parallel to the foliation plane. The {010} poles, oriented parallel to the b [010] axes, show very well developed clusters centered within the Z; the {100} poles are distributed along a girdle within the XY-plane (foliation), with maxima near X. This type of CPO fabric ({100} and {001} girdle within the XY-plane, {010} poles with a cluster centered in Z) is formed within a deformation geometry of axial compression. The omphacite CPOs within fine-grained eclogite mylonites may be characterized as S- to transitional S > L- types with a {001} girdle within the XY- plane (foliation); clusters of {010} poles are centered in Z. However, the {001} poles show a tendency to form weak maxima centered in X; accordingly, the {010} poles show a tendency to form a girdle within YZ (normal to the foliation plane). Despite the intensity, the type of texture is not influenced by the modal composition, in particular by the occurrence of garnet layers and lenses and minor amounts of quartz as well.

We assume that the deformation geometry from the pressure peak onwards is directly related to the mechanism of exhumation. Hence, S-type fabrics predominantely occur within eclogites exhumed by crustal extension. This is associated with a flattening strain geometry and subvertical axial compression.