



Antarctic Ice Fabric Evolution in Relation to Ice Sheet Dynamics

T. Eastgate, P. Sammonds

Department of Earth Sciences, University College London, Gower Street, London. WC1E 6BT. (t.eastgate@ucl.ac.uk)

Two deep ice cores have been drilled for the European Project for Ice Coring in Antarctica (EPICA) at Dome C and in Dronning Maud Land at Kohnen station. We have measured c-axes orientation developed as a result of flow dynamics for the two cores. We have obtained data from samples at depths of 800m to 3100m at Dome C, and 450m to 2500m at Dronning Maud Land. Textures and fabrics of the samples were measured and calculated using an automatic ice-fabric analyzer (AIFA). We have calculated a profile with depth of deformation undergone through the range using the Schmid factor. Ice fabrics at Dome C core shows a clear progression from near random orientation to a single maximum, Dronning Maud Land core showing similar behavior. We compare ice fabric development to the GRIP data from the Greenland ice core which shows an almost development with depth. Texture analysis of the two cores shows the expected grain growth with depth.