



Volcanic synchronisation between the EPICA Dome C and Vostok ice cores (Antarctica) 0-145 kyr BP

F. Parrenin, J.R. Petit, V. Masson-Delmotte, E. Wolff, I. Basile-Doelsch, J. Jouzel, V. Lipenkov, S. Rasmussen, J. Schwander, M. Severi, R. Udisti, D. Veres, and B. Vinther

CNRS/LGGE/UJF, St Martin d Heres, France (parrenin@ujf-grenoble.fr, 00 33 476824201)

This study aims at refining the synchronisation between the EPICA Dome C (EDC) and Vostok ice cores in the time interval 0-145 kyr BP by using the volcanic signatures. 111 common volcanic events were identified by using continuous electrical conductivity (ECM), di-electrical profiling (DEP) and sulfate measurements while trying to minimize the distortion of the glaciological chronologies. This is an update and a continuation of previous works performed over the 0-45 kyr interval which provided 56 tie points to the ice core chronologies [Udisti et al, 2004]. This synchronisation will serve for the establishment of the next synchronised Antarctic dating. A change of slope in the EDC-depth/Vostok-depth diagram is probably related to a change of accumulation regime as well as to a change of ice thickness upstream of the Vostok lake, but we did not invoke any significant temporal change of surface accumulation at EDC relative to Vostok. A significant phase difference is suggested between the EDC and Vostok isotopic records during the 95 - 120 kyr interval, but not during Termination II. Three possible candidates for the Toba volcanic super-eruption ~73 kyr ago are suggested in the Vostok and EDC volcanic records. However the ECM, DEP and sulfate fingerprints for these three events are not significantly larger than many others in the records.