



A common and optimized age scale for Antarctic ice cores

F. Parrenin, D. Veres, A. Landais, L. Bazin, B. Lemieux-Dudon, H. Toyé Mahamadou Kele, E. Wolff, and P. Martinerie

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

Dating ice cores is a complex problem because 1) there is a age shift between the gas bubbles and the surrounding ice 2) there are many different ice cores which can be synchronized with various proxies and 3) there are many methods to date the ice and the gas bubbles, each with advantages and drawbacks. These methods fall into the following categories: 1) Ice flow (for the ice) and firn densification modelling (for the gas bubbles); 2) Comparison of ice core proxies with insolation variations (so-called orbital tuning methods); 3) Comparison of ice core proxies with other well dated archives; 4) Identification of well-dated horizons, such as tephra layers or geomagnetic anomalies.

Recently, a new dating tool has been developed (DATICE, Lemieux-Dudon et al., 2010), to take into account all the different dating information into account and produce a common and optimal chronology for ice cores with estimated confidence intervals. In this talk we will review the different dating information for Antarctic ice cores and show how the DATICE tool can be applied.