



NEW INSIGHTS IN THE EVOLUTION OF ANTARCTIC GLACIATION FROM DEPTH CONVERSION OF WELL-LOG CALIBRATED SEISMIC SECTION OF PRYDZ BAY

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The understanding of the evolution of the Antarctic Ice Sheet is crucial for the comprehension of the history of past global climate. The debate regarding the age of the transition to modern “dry- and cold-based” ice sheet after the Neogene polythermal conditions has been vital since more than 20 years. An evident change in the geometry of the depositional systems of the Prydz Bay continental margin marked the initiation of the Prydz Channel Fan and has been inferred to correspond to such transition. The improvement in the age placement of this change contributes to unravel the last stages of the Antarctic glacial history. We predicted along both dip- and strike-oriented seismic profiles the spatial distribution of P-wave velocity data measured at 3 sites of both Ocean Drilling Program (ODP) leg 119 and 188 on the Prydz Bay continental shelf. We used this information either to assist the correlation of the reviewed existing litho- and bio-stratigraphic information among the drilling sites and to produce an accurate geometric reconstruction of the Neogene shelf units through depth-migration of the seismic data. The reviewed stratigraphy that we obtained suggests an early late to late early Pliocene age for the seismic reflector at the base of the Prydz Channel Fan. This age, younger than previously proposed, is consistent with the age inferred for similar geometric changes identified in different Antarctic margins.