



Seismostratigraphic analysis and paleobathymetry mapping of the Weddell Sea region, Antarctica, for paleocurrent and paleoclimate simulations

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The sedimentary record is a good archive of the pre-glacial to glacial development of Antarctica and changes in climate tectonics and ocean circulation. Three transects, totally up to 4000 km long consisting of multichannel seismic reflection data from various organisations, were used to interpret horizons to define the initial basin-wide seismostratigraphy. We expand this initial stratigraphy model to the greater Weddell Sea region with more than 200 other seismic lines and identified the pre-glacial to glacial sedimentary units. Sparse borehole data from ODP Leg 113 and SHALDRIL constrain sediment ages. Complied magnetic anomaly shows a decrease in ages from southeast to northwest of the basement. Basically, three basic units are defined as pre-glacial(~148~34Ma), transition(~34~12Ma), Full-glacial(~12~1Ma). We created sediment depth and thickness grids of three units. Sediment thickness grids allows us to compare the pre-glacially dominated and glacially dominated sedimentary development of the Weddell Sea. The grids indicate that the thickest sediments are present in southern and southwestern Weddell Sea, the maximum sediment thickness is up to 10 km. The largest deposition centers are located in front of the Filchner Ronne Ice Shelf. Further, paleobathymetry grids will be calculated and used to set boundary conditions for ocean circulation and climate models which help us to understand the regional ice sheet dynamics and regional oceanic circulation in previous warm periods.