



## **Model-Simulated Heat Budget of the Antarctic Atmospheric Boundary Layer**

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Recent Antarctic surface climate changes show a mixed pattern of strong warming confined to certain regions (e.g. the Antarctic Peninsula) and slight cooling or no change elsewhere. A conclusive explanation for the observed temperature trend patterns is still missing. A key for understanding these patterns is the heat budget of the Antarctic atmospheric boundary layer. Using a state-of-the-art regional atmospheric climate model, mean (1980-2004) seasonal heat budgets have been determined, vertically integrated across the boundary layer. Evaluation of the modelled heat budget is obtained from a comparison of observed and modelled atmospheric temperatures. The spatial patterns of the heat budget provide an incredibly large amount of information about the dynamics of the Antarctic boundary layer. For example, the heat budget reveals how topographic undulations locally deepen or shallow the surface inversion.