

Future Research on Climate Change in West Antarctica: A discussion

Warming in West Antarctica is substantial and of global significance due to its potential future impact on sea level through extensive summer melting.

The importance of the problem suggests a community effort would be worthwhile to effectively address the key issues and to raise the profile of the effort in the eyes of NSF given the many logistical challenges.

What should be done?

Some thoughts to provide the tools to develop a better understanding of what is happening and why the following aspects are suggested:

- **Further optimization of the Byrd temperature record – Nicolas talk**
- **Establish a reference (or fiducial) autonomous station at Byrd perhaps fashioned after Summit Greenland. Complement this with an optimal regional observing network. Redundancy is a key aspect.**
- **Spatially extend the record into the past prior to the 1950s to provide a long-term perspective. One way to do this is to do planned ice coring along with borehole thermometry. Can the surface based pressure reanalysis help?**
- **Process investigations to understand the factors controlling the surface energy balance (advection, cloud cover, surface winds, etc.)**
- **Further analysis of the controlling mechanisms on the atmospheric circulation behavior: tropical versus high latitude forcing.**