



## **An environmental power system for use in Polar Regions.**

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The remote nature of Polar Regions dictates that much instrumentation must have its own power supply. However, supplying power at a site where temperatures can be as low as minus 80°C, sunlight can be absent for periods of 160 days, and wind speeds of hurricane force are expected every year, presents significant technical challenges. Strict environmental legislation and logistic operating constraints only add to the challenge.

British Antarctic Survey have developed an environmental power system (solar, wind, rechargeable batteries) that has successfully operated for over 5 years and at more than 20 sites, powering several different types of instruments such as magnetometers, radiometers, weather stations, cameras, geodesic GPS etc. Initially designed as a 0.5W system, its modularity has allowed variants of up to 2.5W to be easily made.

This presentation will describe the system and discuss the approach used to overcome the main challenges, in particular thermal management.