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Atmospheric Research in the High Arctic: The PEARL Experience (I)

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It is well-known that the atmosphere in the polar regions of this planet is considerably different from the more temperate regions due to a variety of factors including the planetary rotation, the magnetic field and the fact that the extreme polar regions undergo an annual cycle of light and darkness which overwhelms the 24-hour cycle that characterises the lower latitudes.

For the last decade a group of university and government researchers operating as an informal group called the Canadian Network for the Detection of Atmospheric Change (CANDAC) have operated a year-round observatory at Eureka, Nunavut on the 80N latitude line. This observatory has been dubbed the Polar Environment Atmospheric Research Laboratory (PEARL).

Research at PEARL spans the atmosphere from the surface at about 100km and teams from many Canadian universities as well as international groups are engaged in research at the site.

One talk cannot suffice to show the entire range of the research currently underway at PEARL and so highlights, perhaps of more interest to a physics community, will be presented along with some account of the history and speculation about the future of research at PEARL.

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