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Low powered radiometers

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Near infrared Michelson interferometers are operated at many locations worldwide, measuring the hydroxyl airglow to infer the temperature in the atmosphere at around 87km and the parameters of gravity waves that carry momentum and energy from the troposphere to the middle and upper atmosphere.

In the Antarctic, interferometers are operated at Rothera (68˚S, 68˚W), Halley (76˚S 27˚W) and South Pole. However, spatial coverage is limited by the availability of research Stations.

In this Poster, we discuss a Low Powered Radiometer (LPR) that British Antarctic Survey have developed from technology used by the successful Low Powered Magnetometer Program. These environmentally powered LPRs, operate unattended for a year and record the NIR intensity at 1550nm every 150s (during appropriate conditions). With LPRs deployed between Halley, Rothera and South Pole, gravity wave activity over a large area of the Antarctic can be measured. An inter-comparison of an LPR and an interferometer co-sited at Rothera will be presented.