Improving the Performance of Long Range SODAR

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A long-range SODAR (acoustic wind profiler) needs to operate at lower acoustic frequencies than other SODARs to reduce sound attenuation during the round trip of the acoustic signal. However, a lower frequency also means an increased susceptibility to environmental noise. Therefore, as it is impossible to increase the output power of the SODAR (for both practical and nuisance considerations), the only reasonable solution is improved signal coding.

Remtech introduced long-range phased-array SODARs in late 1996, and there are over 20 systems installed worldwide (as of 1999).

This paper discusses how recent software improvements now allow for their use for sites where the ambient acoustic noise is up to 55 dBA. We will show intercomparison results with various standard wind speed measurement techniques.