

## Radar Backscatter Measurements From RADARSAT SAR Imagery of South Pole Station, Antarctica

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### **Abstract:**

Ice Sheet backscatter around South Pole Station was measured from several different azimuthal angles using RADARSAT-1 SAR data. We observed strong azimuthal anisotropy (3-4 dB) between radar look directions across and along the prevailing wind direction. We speculate that the azimuthal variation of backscatter around the South Pole area may be largely attributed to systematically oriented sastrugi and buried sastrugi. Radar backscatter is well correlated with surface topography over a spatial wave length band of 15 to 20 km. We propose that grain size variations control backscatter patterns associated with undulating surface topography.