

Time Domain Reflectivity Imaging (TDRi) – A New Technique for Snow Measurement

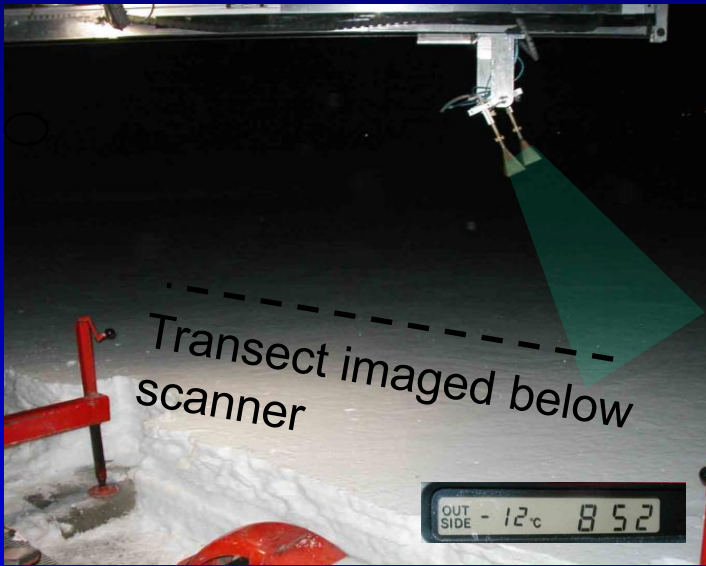
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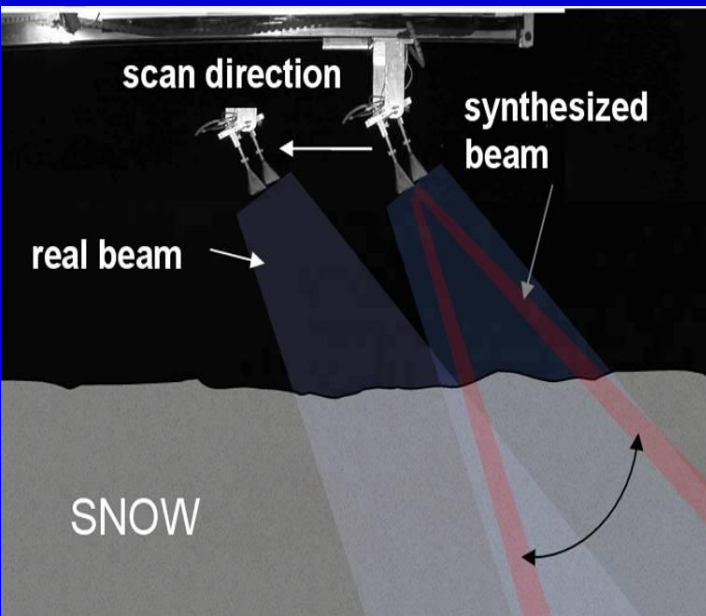


Time Domain Reflectivity Imaging (TDRi) - A New Technique for Snow Measurement

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- SAR imaging provides no detail on the internal vertical backscatter distribution within the snowpack.
- Retrieval algorithms presently assume rather simple and idealized structures for what are likely to be complex and strongly layered snowpacks due to the time history of snow deposition and metamorphism.
- Of special interest is separating the ground and snow returns needed for model validation.
- TDRi offers the opportunity to directly measure the vertical backscattering through a snowpack with unambiguous separation of ground and snow returns without the requirement of physical disturbance to the scene.



- In the TDRi scheme data is collected as for normal SAR, but with a forward-looking antenna.
- The wide real beam is sharpened to provide a much narrower beam by addition of the elemental measurements
- The synthesized beam can be steered through a range of incidence angles within the extent of the real beam.

