

Supplement of Sub-kilometer Scale Snow Depth Distribution on Sea Ice of Different Ages and Thickness

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1 Data from Churchill Freeze-up Campaign

The dataset contains snow depth transect measurements collected during the Churchill Freeze-up Campaign (December 2–15, 2021). Snow depth was measured using a Magnaprobe; however, no co-located sea ice thickness measurements are available. Based on local knowledge, the sea ice conditions correspond to first-year ice, similar to those observed at Resolute Bay in 2025. The results show that the log-normal distribution provides the best fit, consistent with findings from the Resolute Bay field data.

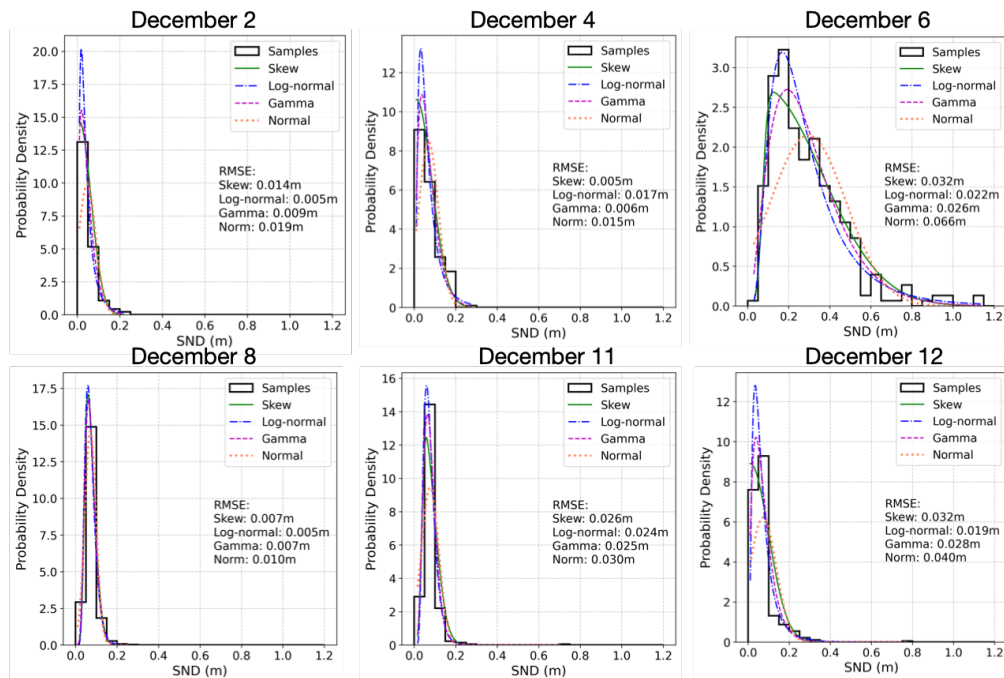


Figure 1. Display of the histograms and the fitted probability density functions (PDFs) over transects from Churchill Freeze-up campaign.