# Snow Radar Tools Applicable for Sea Ice and SUMup Update

Lora Koenig

NASA GSFC

OIB Workshop 1/29/2014

# Land Ice Pick Algorithm

Land Ice Algorithm Characteristics:
- Surface pick is 4 times air noise (>Mean 1000 bins *4)
- Band pass filter is used to determine peaks (5x5 low pass 50x5 high pass)
- ¼ of the peak width is used as pick and connected using leading edge
- ~50 m along track resolution
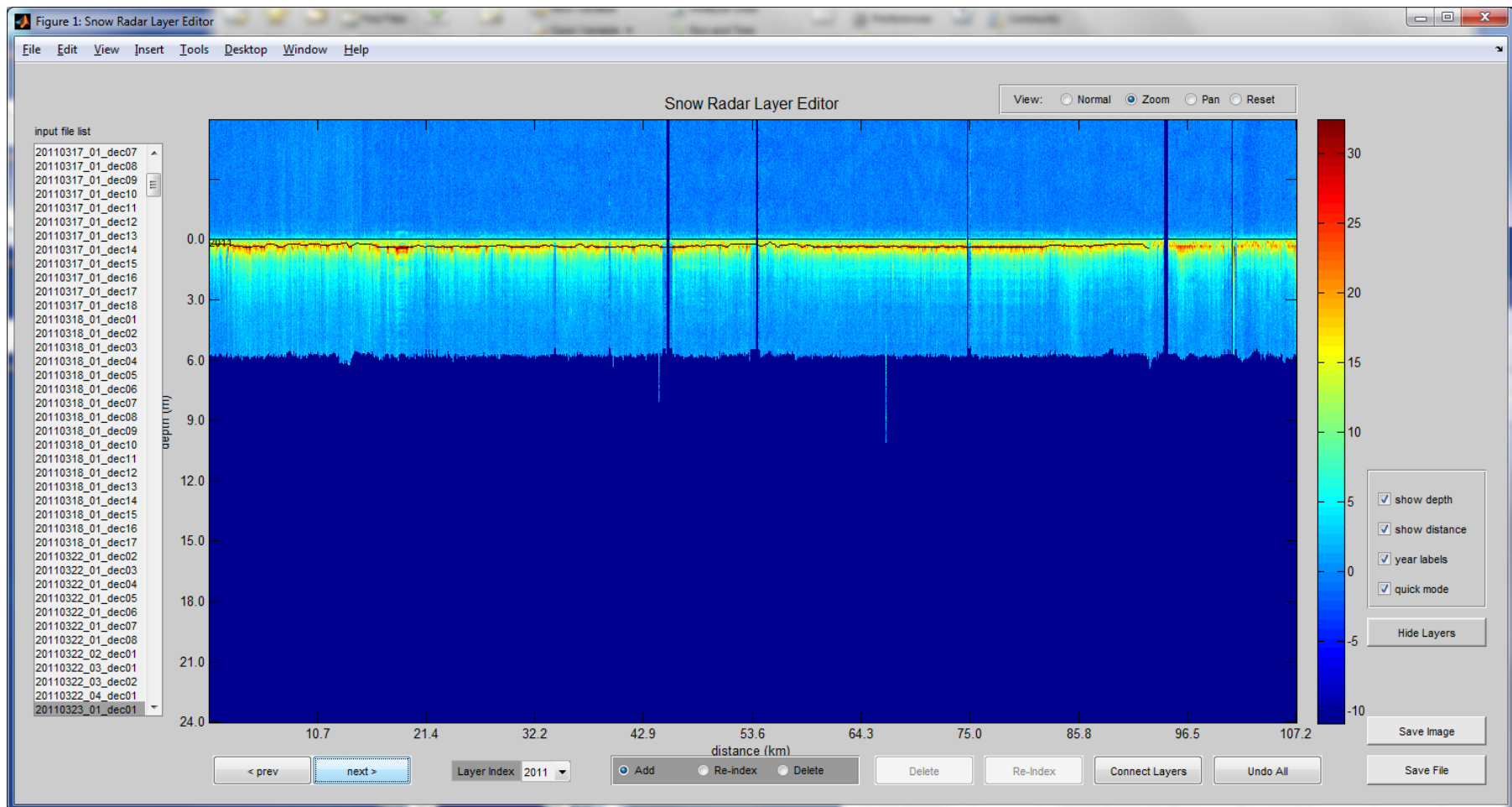
Sea Ice Applications:
- Matlab GUI interface is a powerful tool for visually/mannually adjusting picks
- Preprocessing Code can be adjusted to Nathan's algorithm if GUI interface is useful

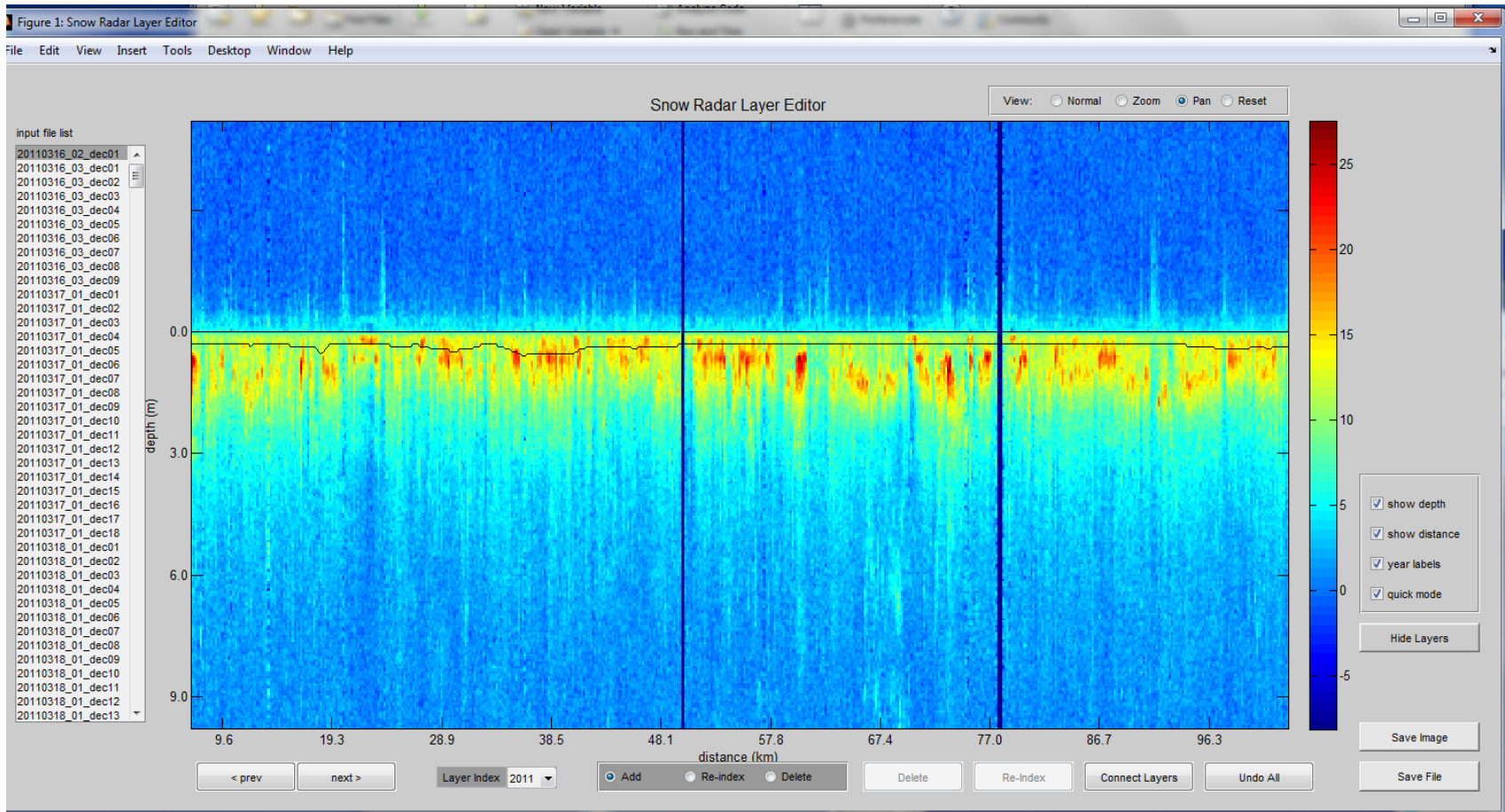Contact Lora Koenig if you are interested in Matlab Code including GUI. It will be posted in final version ~June 2014.
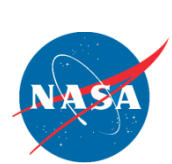
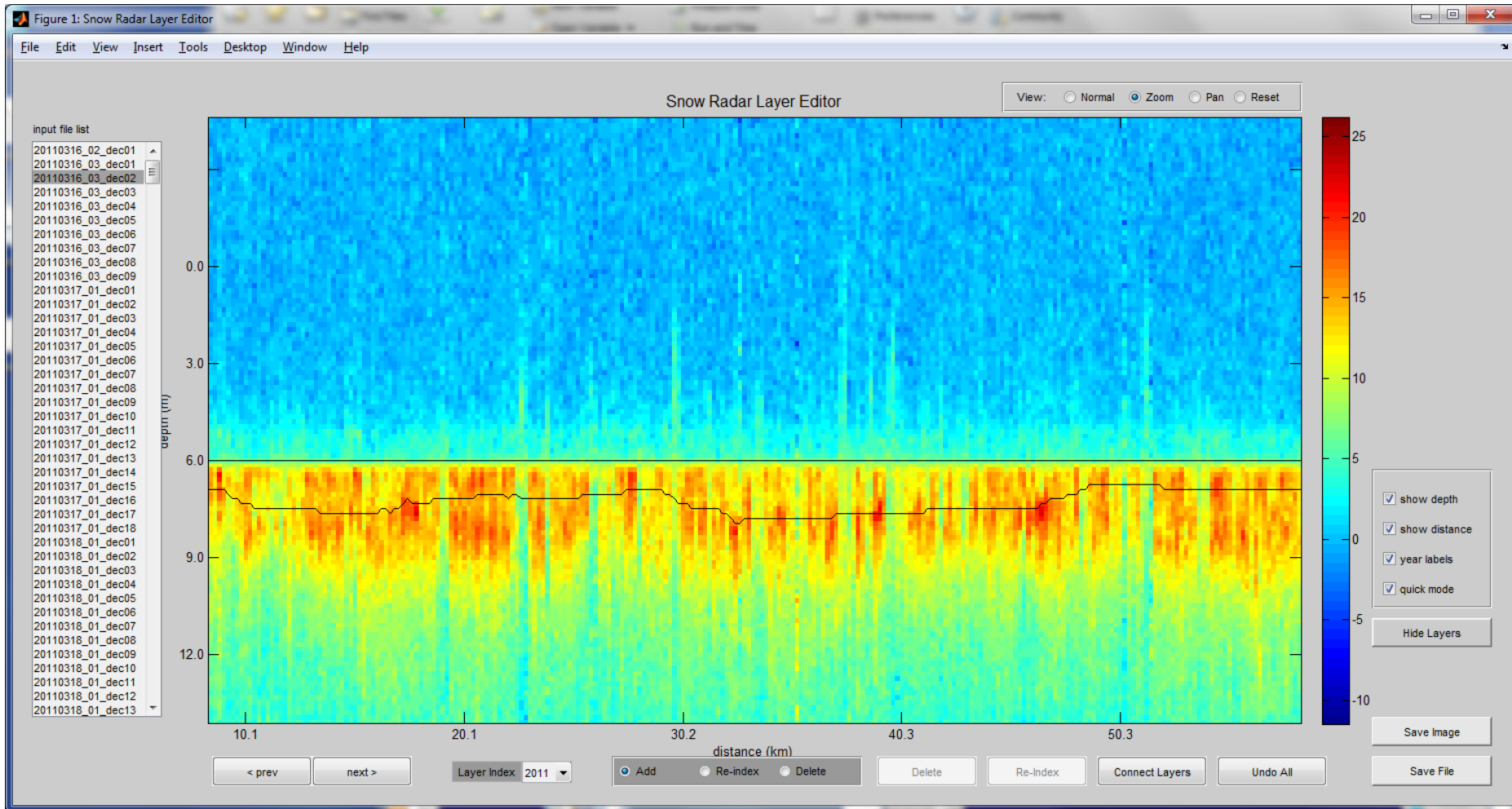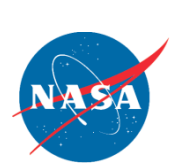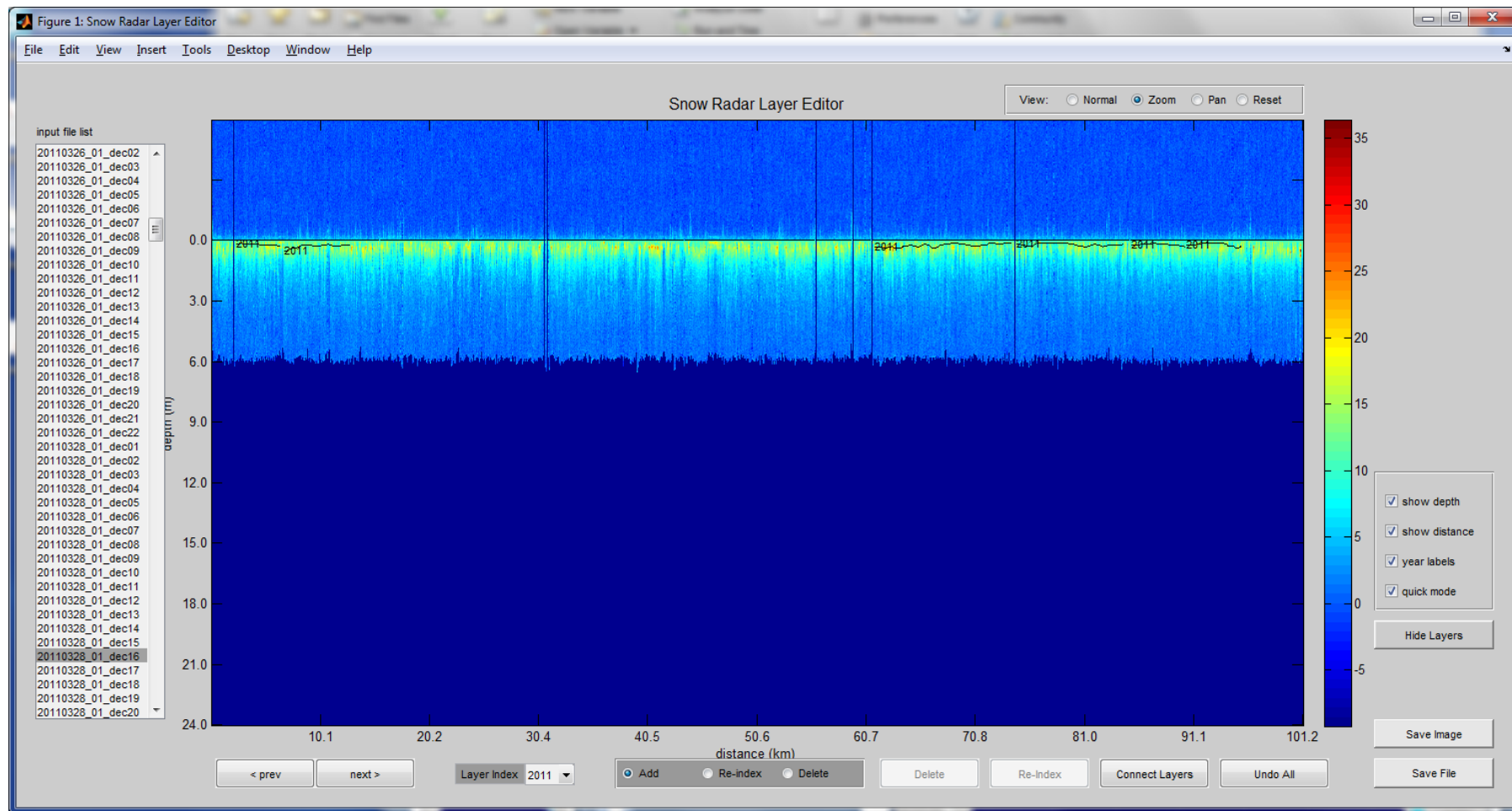# GUI and Picks over Sea Ice

## The Good

# The Bad

# The Bad, Close up
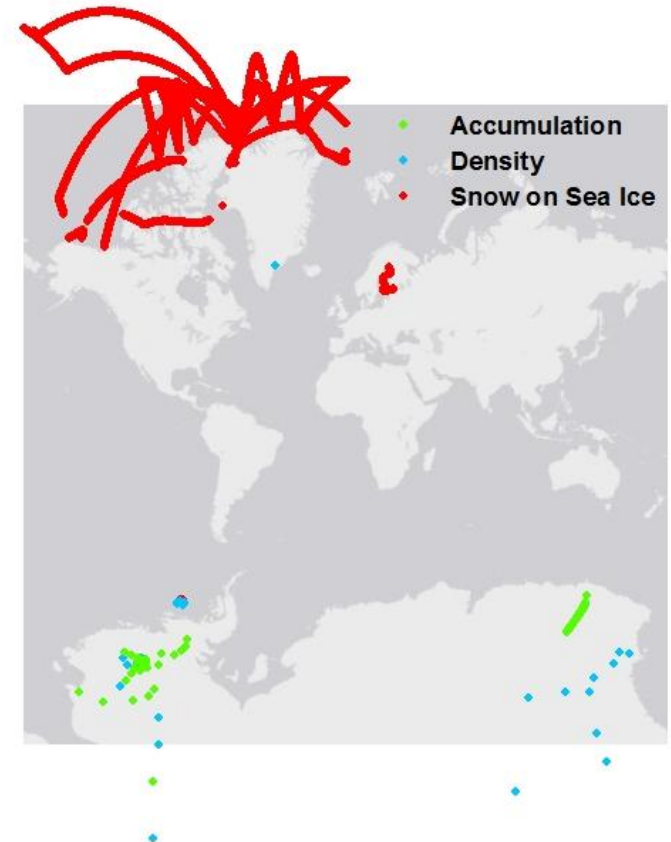
# The Intermittent

# SUMup Snow on Sea Ice and Density Dataset

Over 0.8M points in SOSI dataset which includes:
- SIMBA 2007 data- Lewis et al. 2011.
- Finnish Meteorological Institute, Sea Ice Observers data 1991-2012, Provided by Eero Rinne
- IceBridge Dataset- Kurtz et al. 2012.
- IceBridge Dataset- Panzer is Coming Soon.

~110 Density measurements over sea ice (SIMBA)



Accumulation
Density
Snow on Sea Ice

Data Posted at: http://neptune.gsfc.nasa.gov/csb/index.php?section=267
Under Events from NASA Cryospheric Science Laboratory Page

# Example of SOSI data



**Please submit any relevant SOSI or Density data you have.**
**Data templates are on-line**.

http://neptune.gsfc.nasa.gov/csb/index.php?section=267
Under Events from NASA Cryospheric Science Laboratory Page