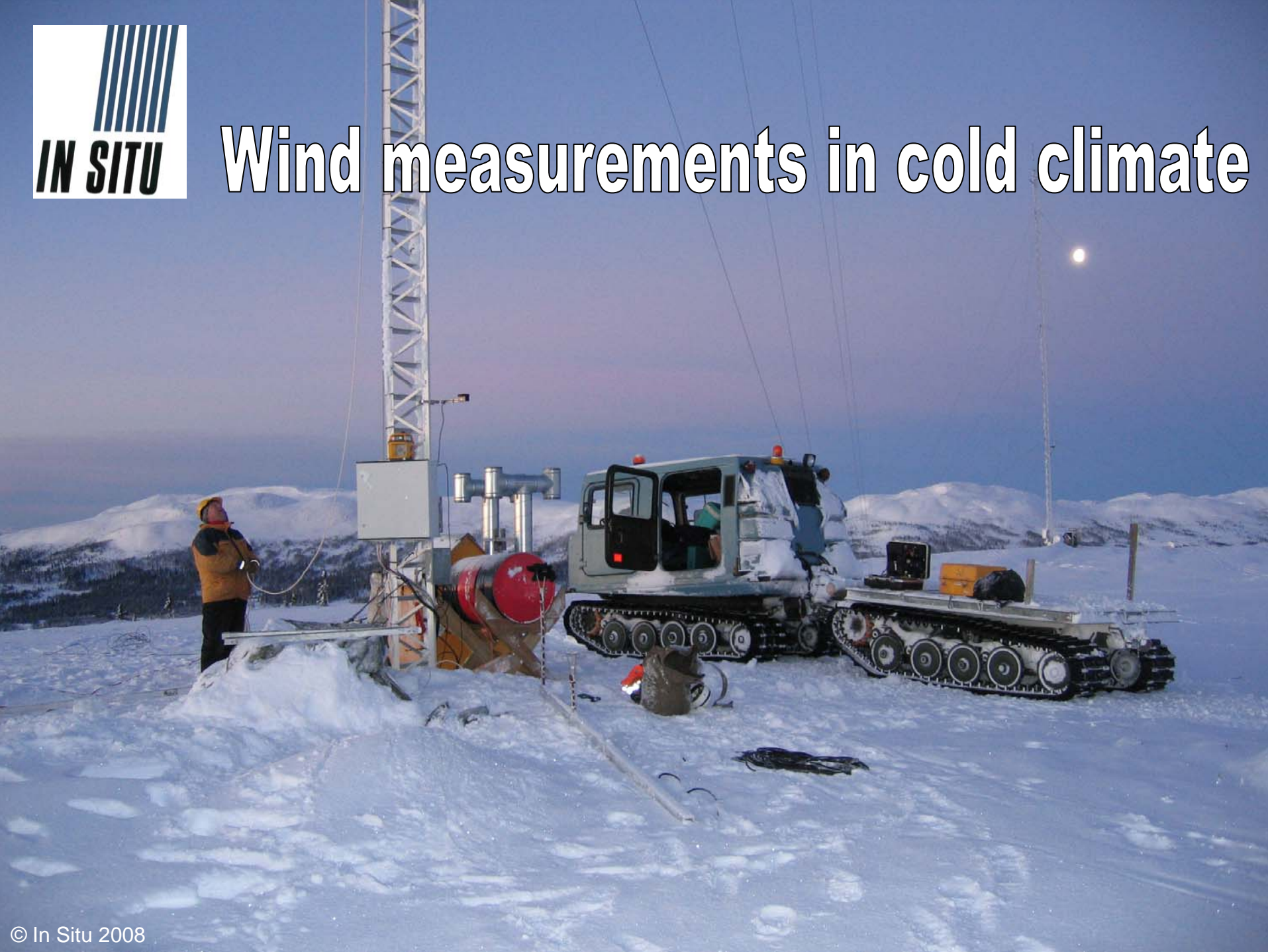




Wind measurements in cold climate



Power Supply



Gasoline Generator
Battery Box
Petrol Drum 200L

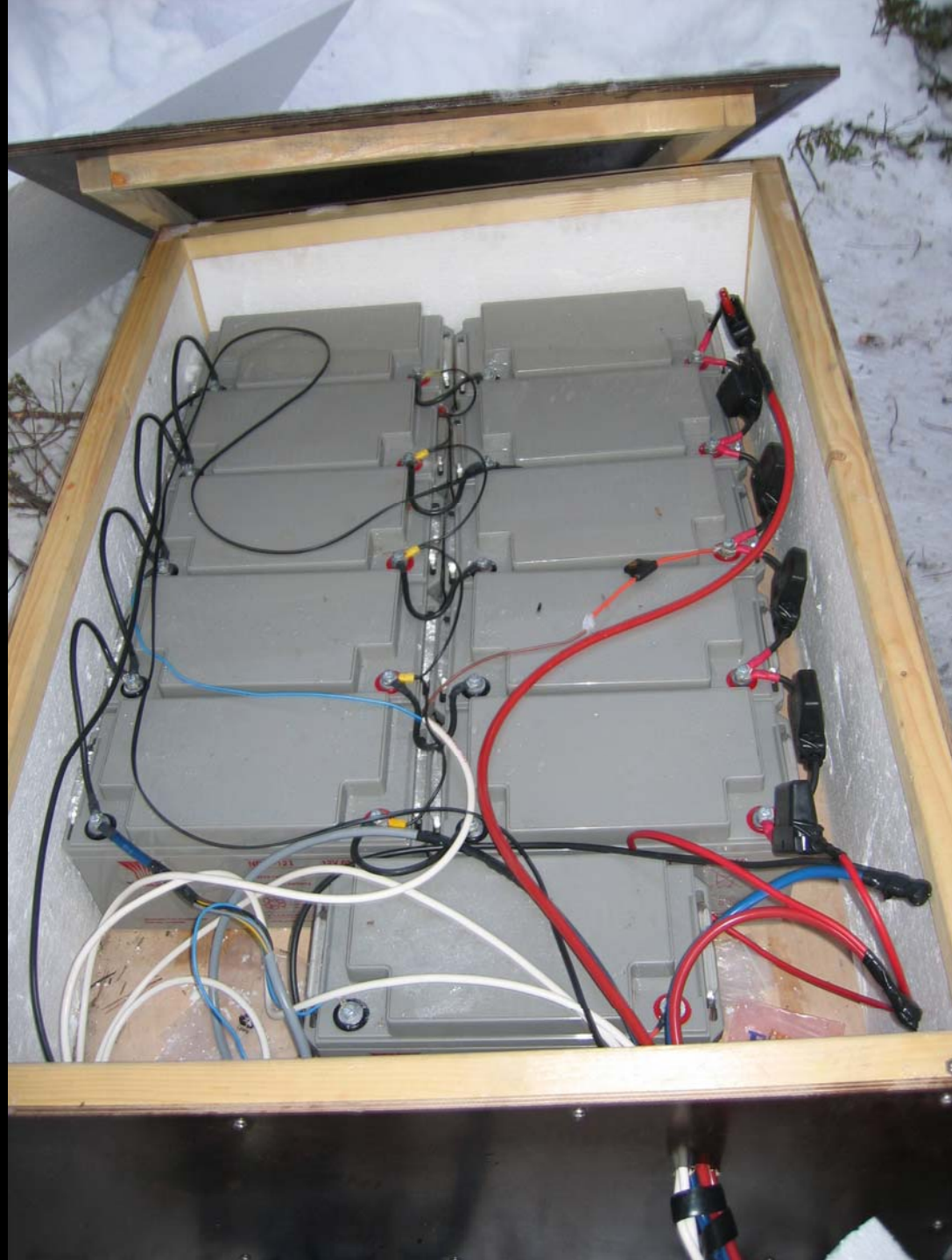
Four stroke gasoline engine



- **230V 1000W continuous at 0°C**
- **2500W peak**
- **Charger: Typical 24VDC 40A**
- **Gasoline: 60l/week for 2xVAA252+2xVAV252**
- **Two or four programmable 220V channels**

Insulated Battery Box

- 5x65Ah @ 24V
325Ah for heating
30h @ 10A load
- 1x65Ah @ 12V for
Logger System
- Battery
Temperature Feed
Back to Charger

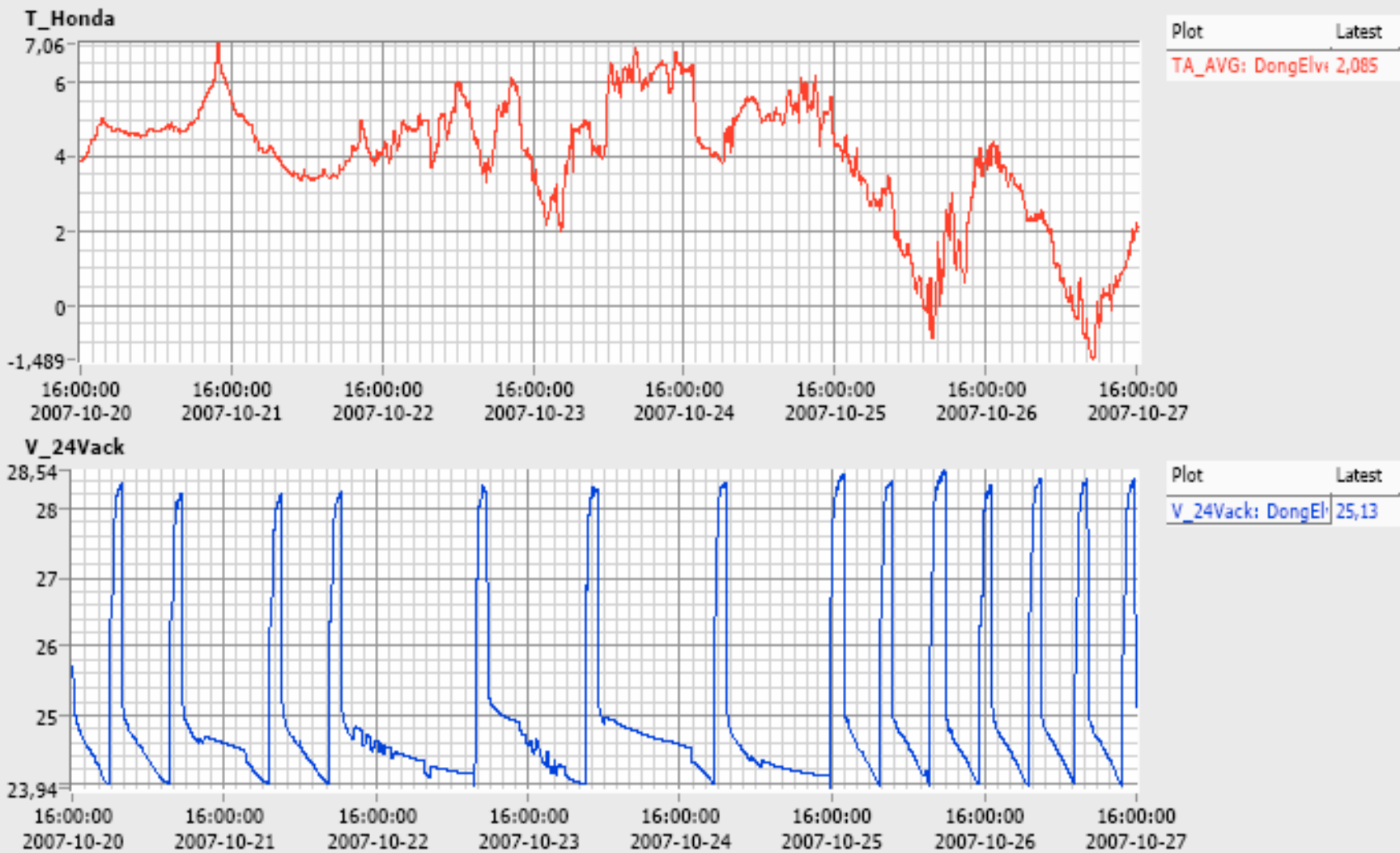


Control Panel

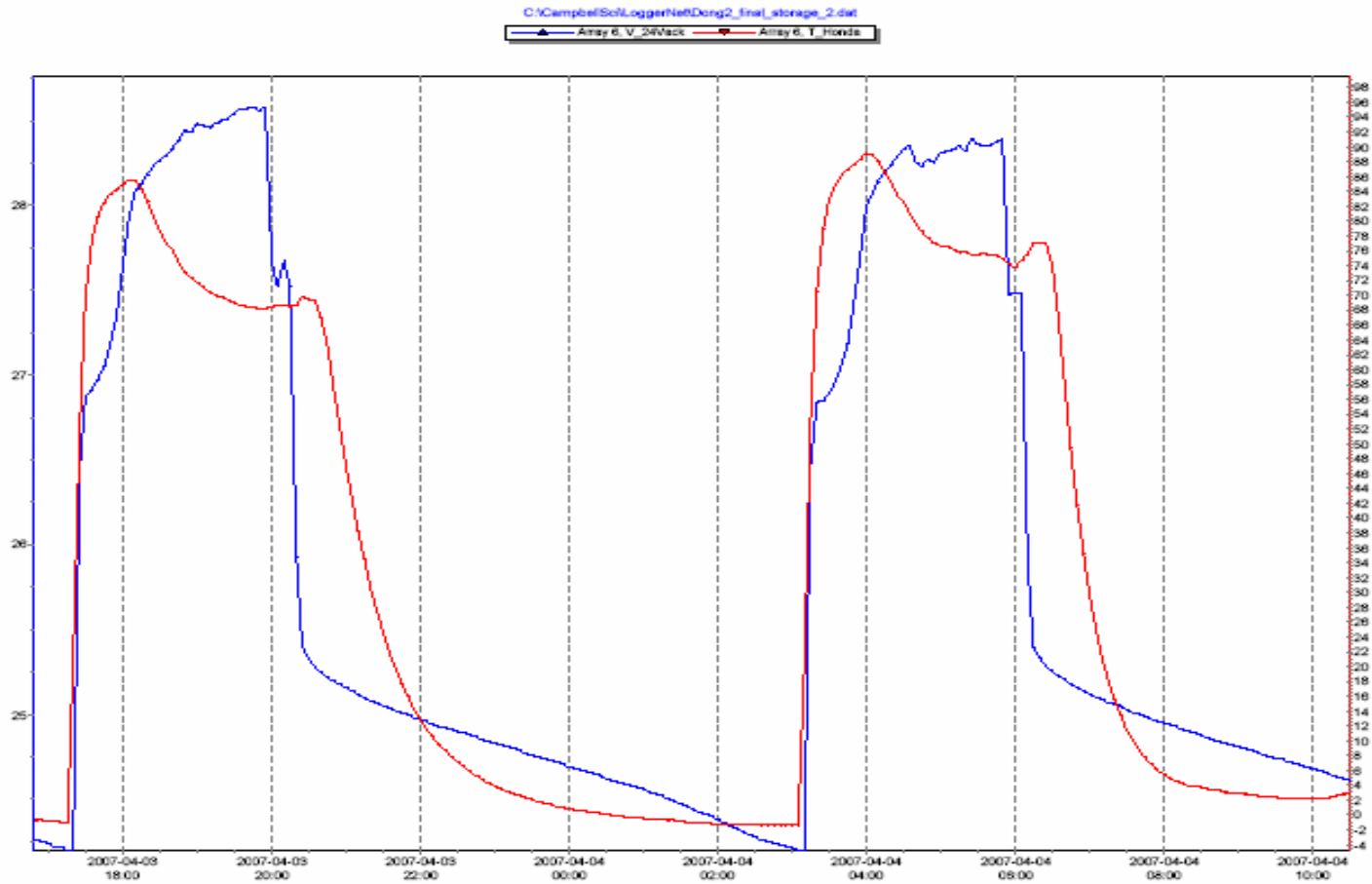


- Switches for functions in logger box.
- In Auto mode all functions are under program control
- ...or remotely controlled via GSM

Charging on Demand!



Boom Heating after Charging



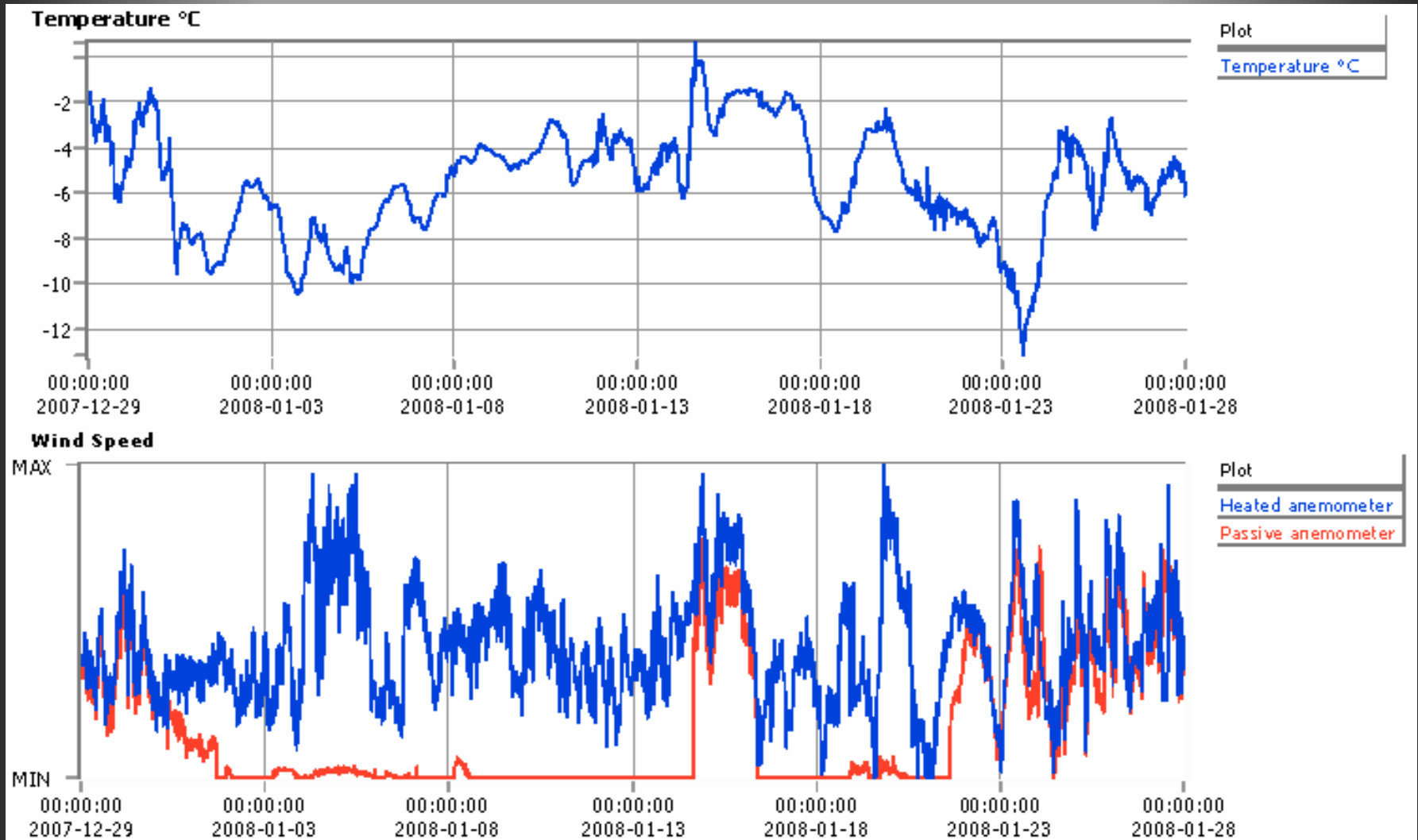
Mast instrumentation



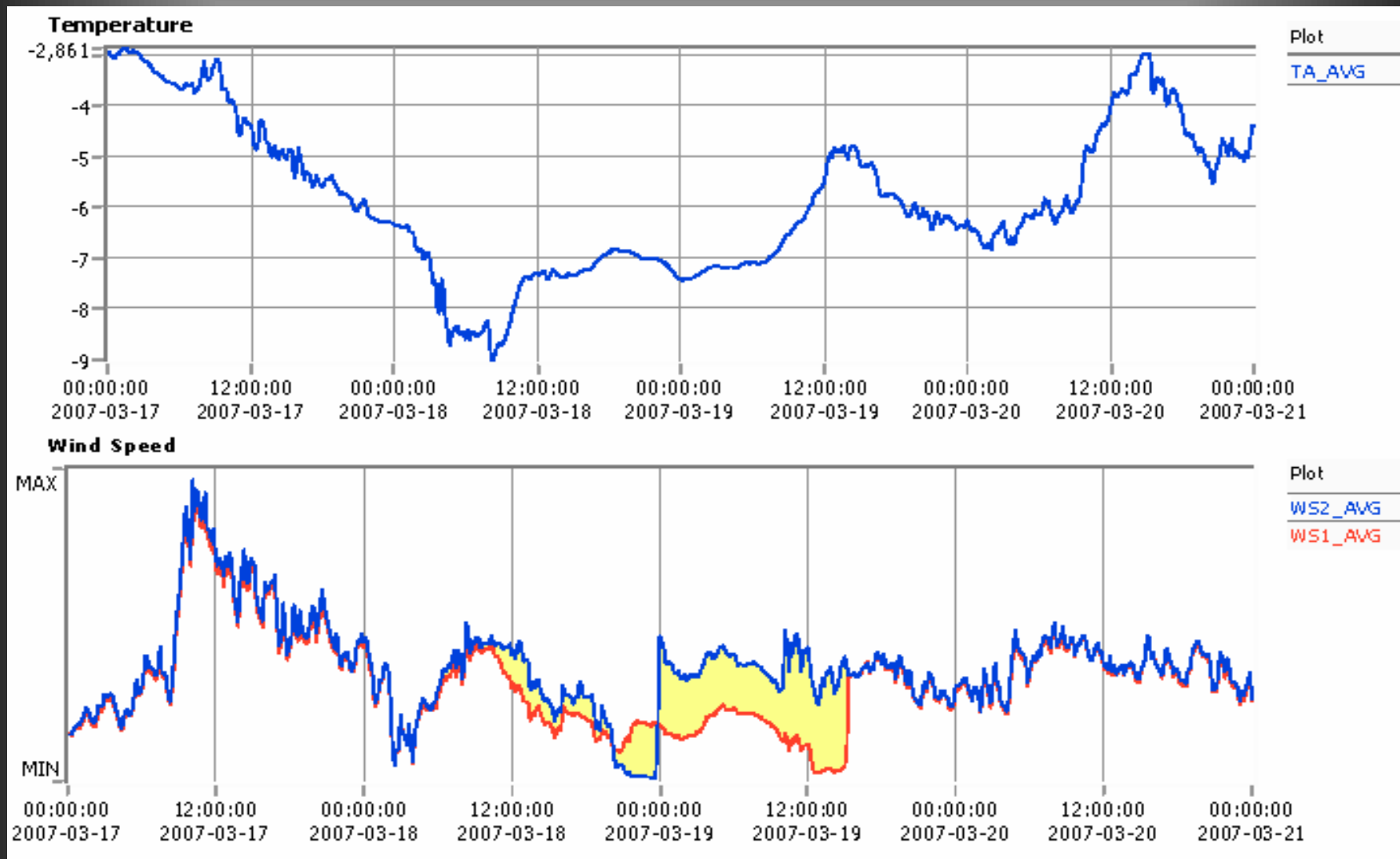
Vaisala

NRG

Heated vs. Unheated Anemometer



Heated Anemometer





Conclusions

- Unheated sensors often disturbed.
November to Mars <20% data for one of the sites.
- Heated Sensors: Close to 100% availability.
- Aerodynamic disturbances possible due to structure icing. Boom heating applied at one of the sites.

Pictures and sample data sets by
courtesy of:

Dong Energy
and
Nordanvind Vindkraft AB

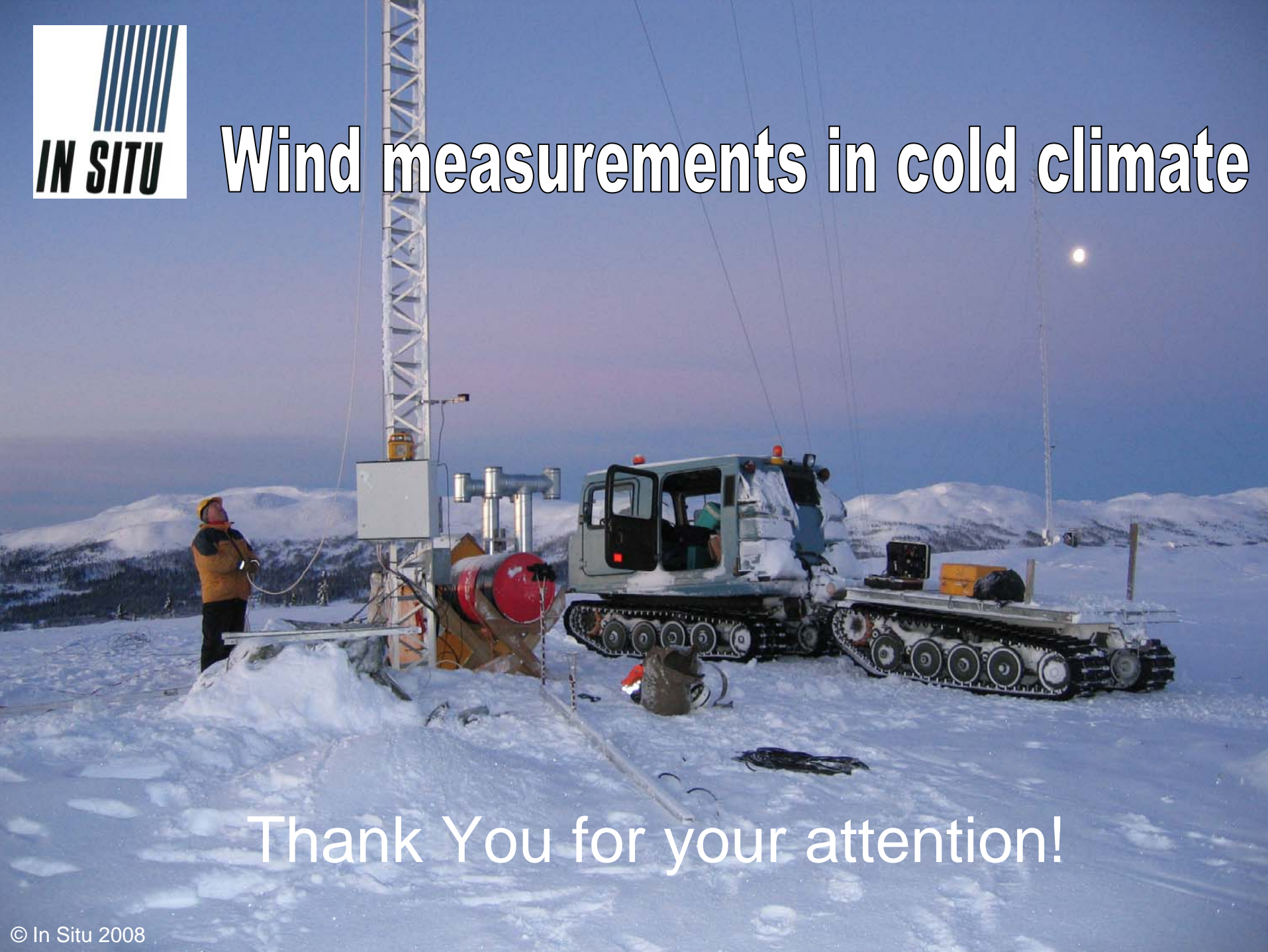


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Wind measurements in cold climate



Thank You for your attention!