

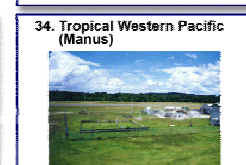
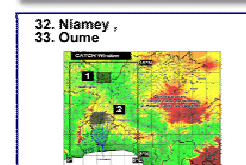
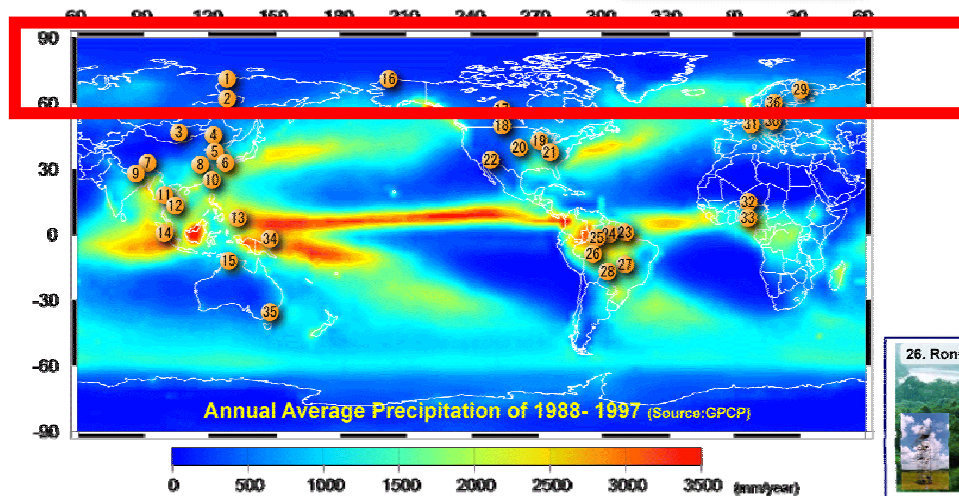
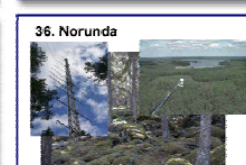
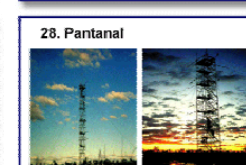
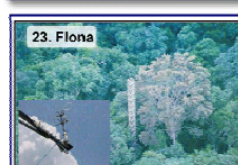
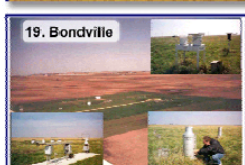
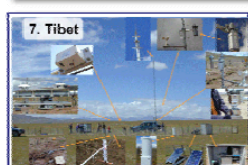
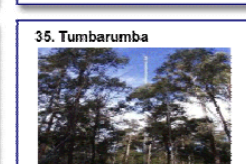
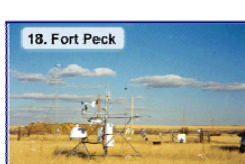
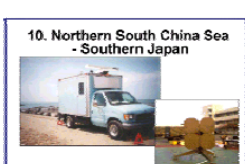
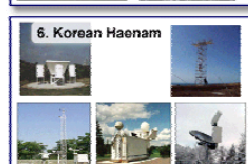
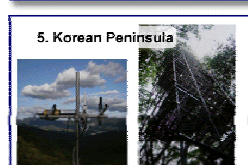
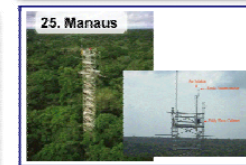
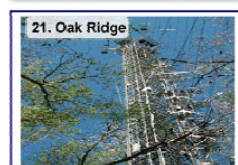
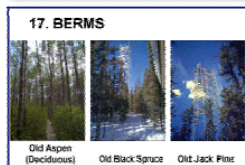
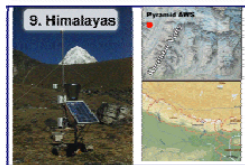
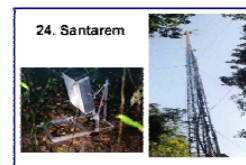
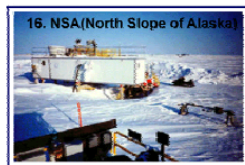
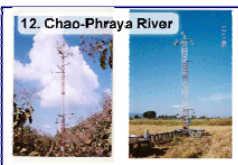
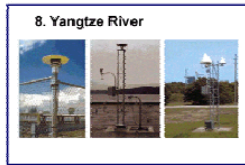


An Element of WCRP initiated by GEWEX

Part-II(2007-2010)

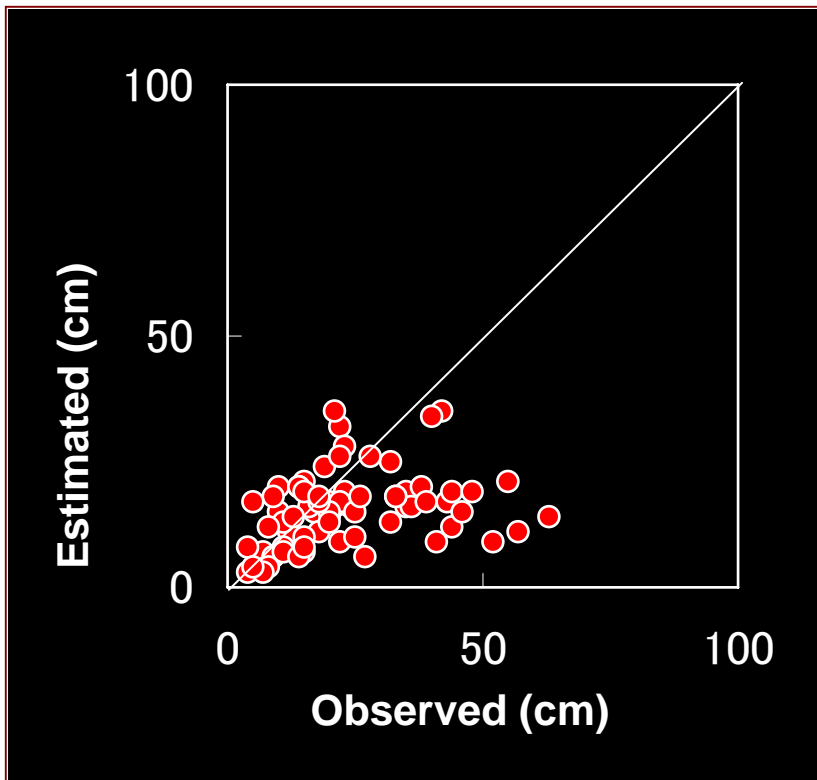
- Implementation of the CEOP-II Integrated Observation and Data System for the Global Energy and Water Cycle as planned in Part-I above;
- Submit CIMS Results as a Contribution to WCRP Pan Monsoon Study;
- Apply WESP results to an Extension of Down-scaling and transferability Studies and, thereby, as a contribution to the Integrated Water Resources Management (IWRM) process which is designed to assist countries in their endeavour to deal with water issues in a cost-effective and sustainable way.
- Undertake and conclude a Cold Region Study in Cooperation with the WCRP **Climate and Cryosphere (CliC)** Project and **the International Polar Year (IPY)** effort
- Undertake and advance scientific goals related to understanding and defining Extreme Event Mechanisms
- Undertake and advance knowledge of the interactions between Aerosols and the Water Cycle.

EOP International Cooperation for the Global Coverage

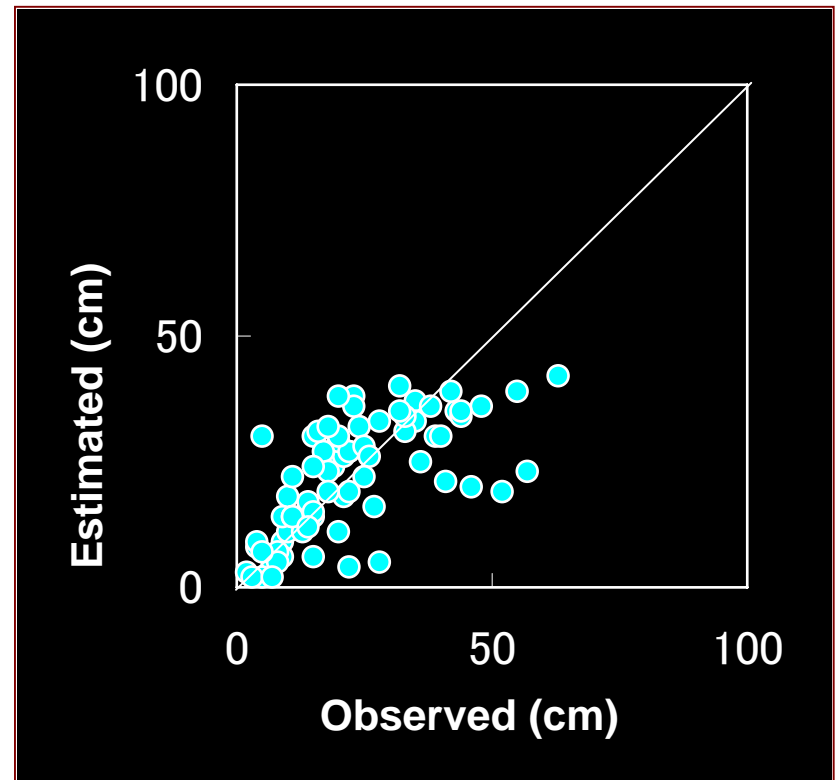


IMPROVED!

Old algorithm



New algorithm



IMPROVED!

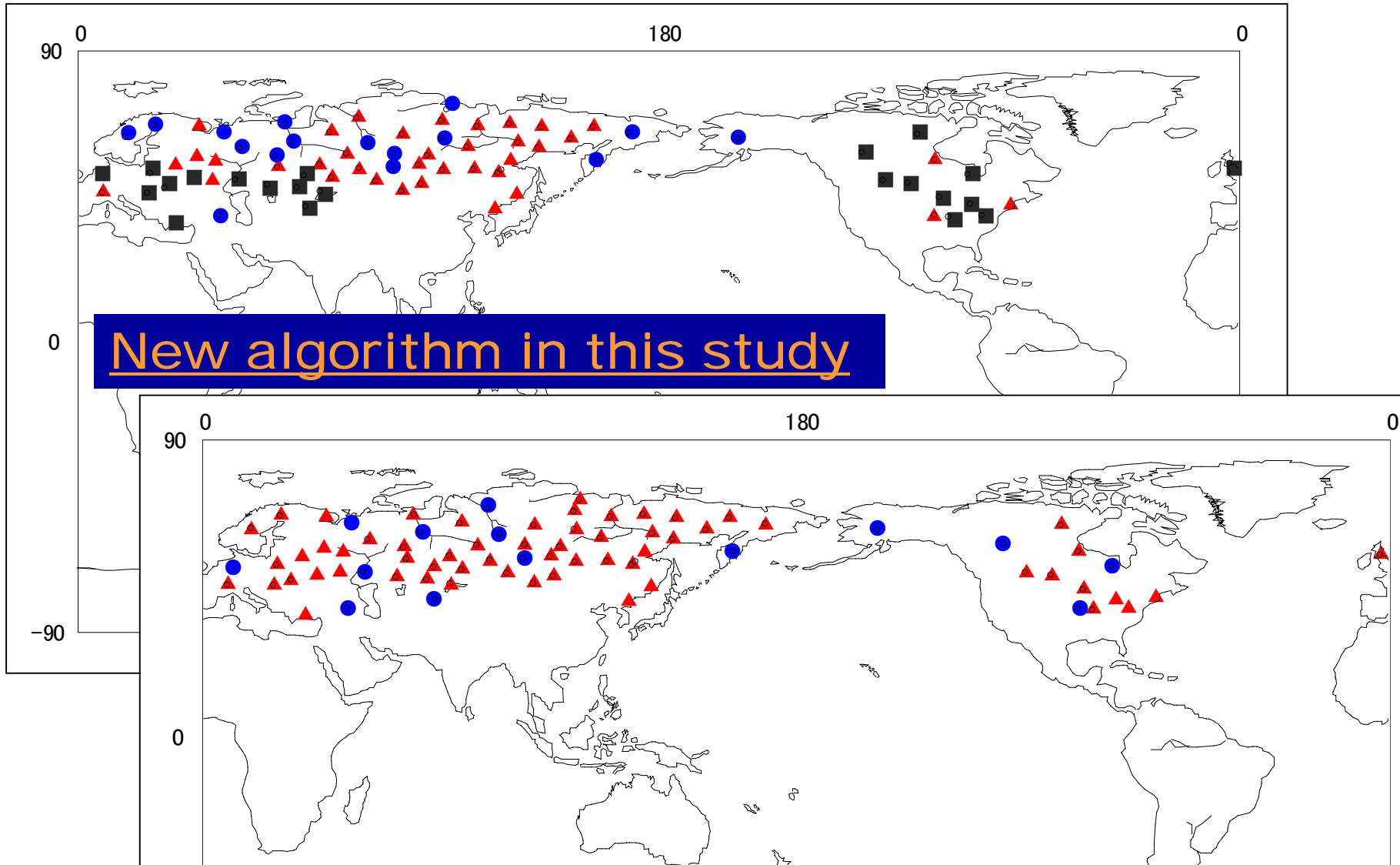
Old algorithm

Δ SD: Average of Absolute Errors

Δ SD < 20cm : ▲

Δ SD > 20cm : ●

Out of Algorithm Applicability: ■

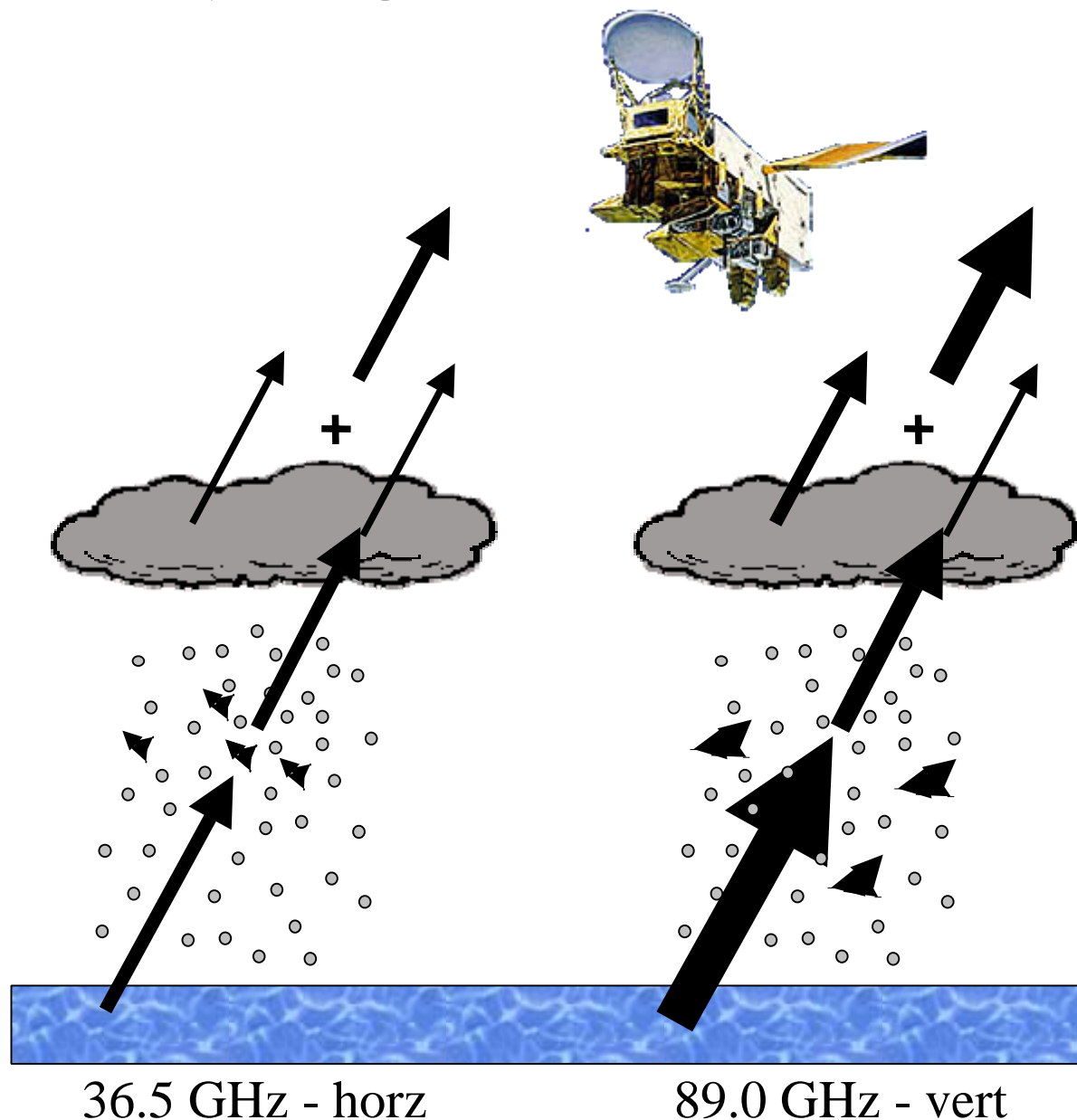


RTM over Ocean

Absorption + Emission
Temperature, Cloud Water

Scattering
Number of Particles => Snowfall

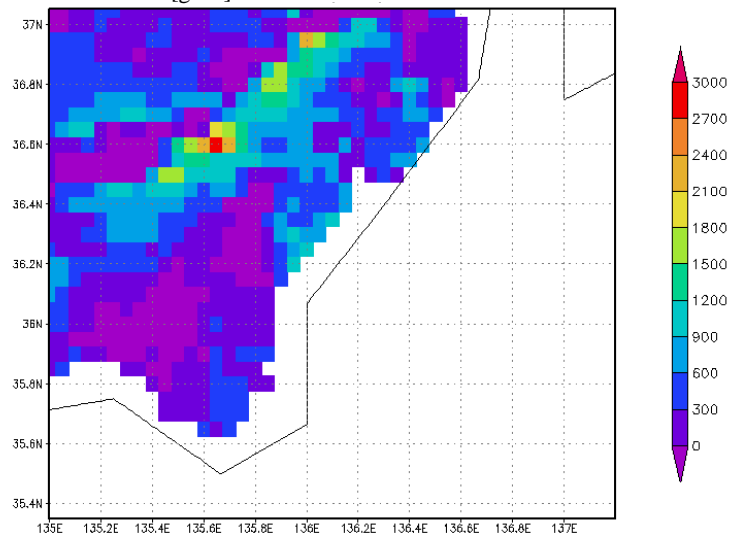
Emission (Background)
Wind, Temp, Salinity



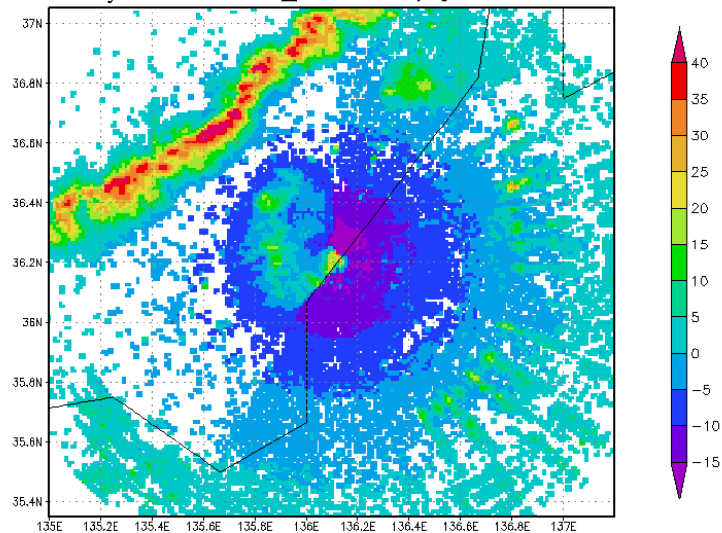
Snowfall

Snowfall [g/m²]: Snow + Cloud Water

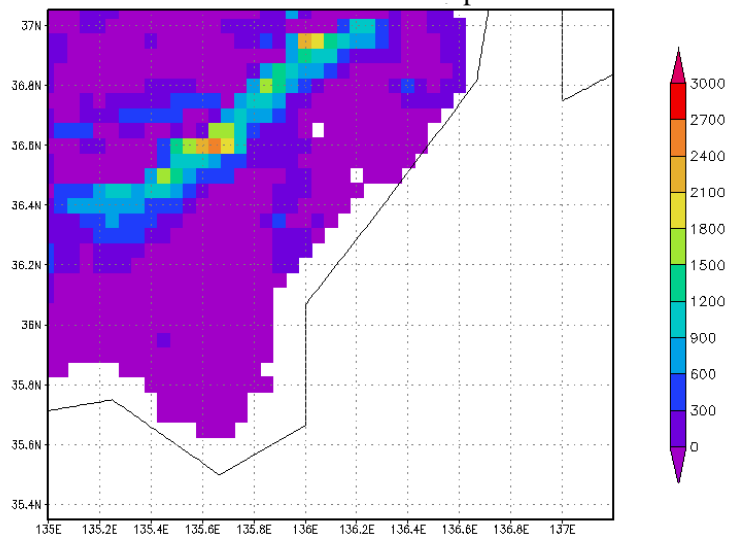
Snowfall [g/m²] - Snow + Cloud Water



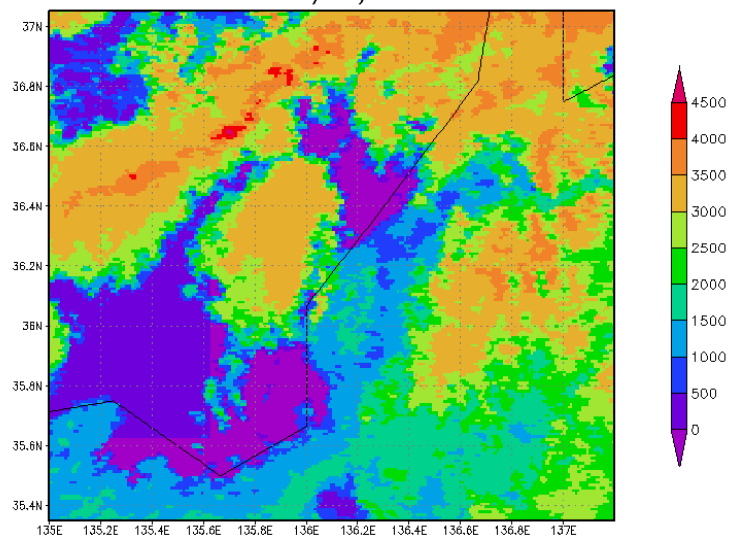
Radar Reflectivity 14021300_0000zec.xy.grads



Snow + Cloud Water + Windspeed

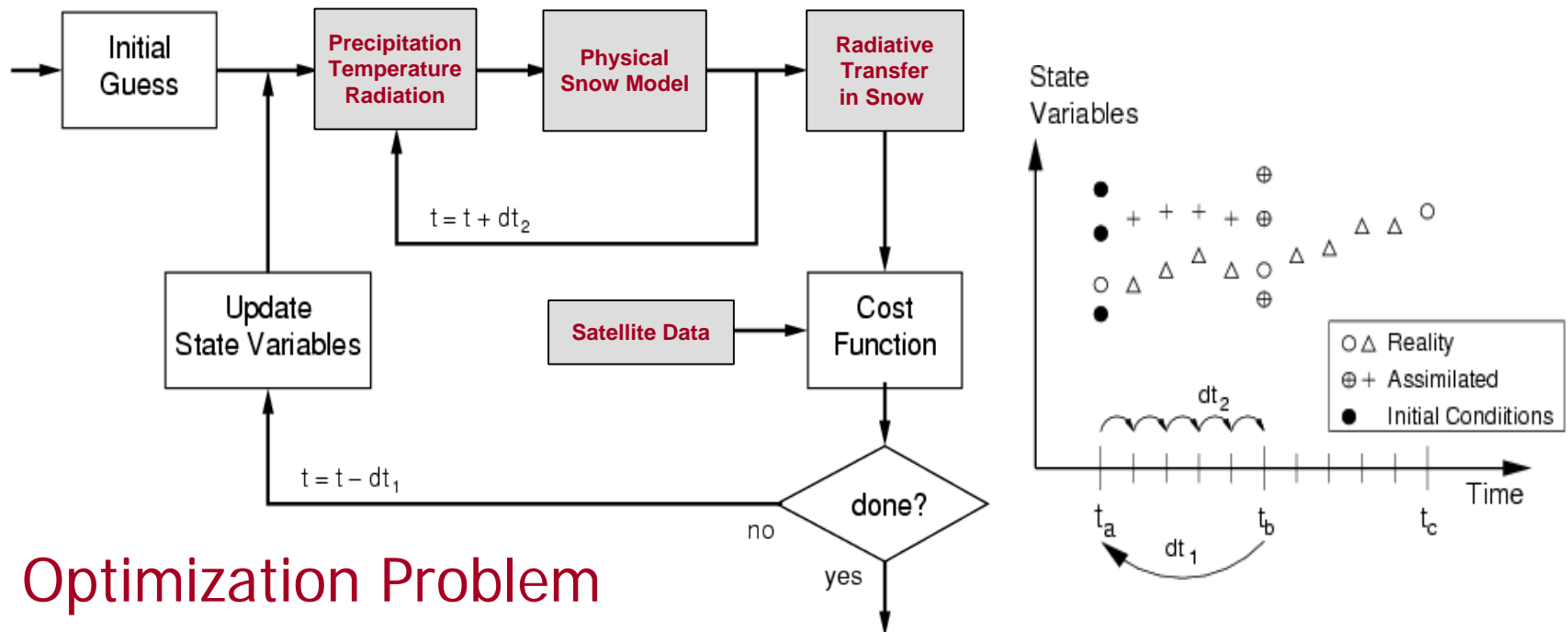


Cloud Top CT - 2003/01/13 17:10

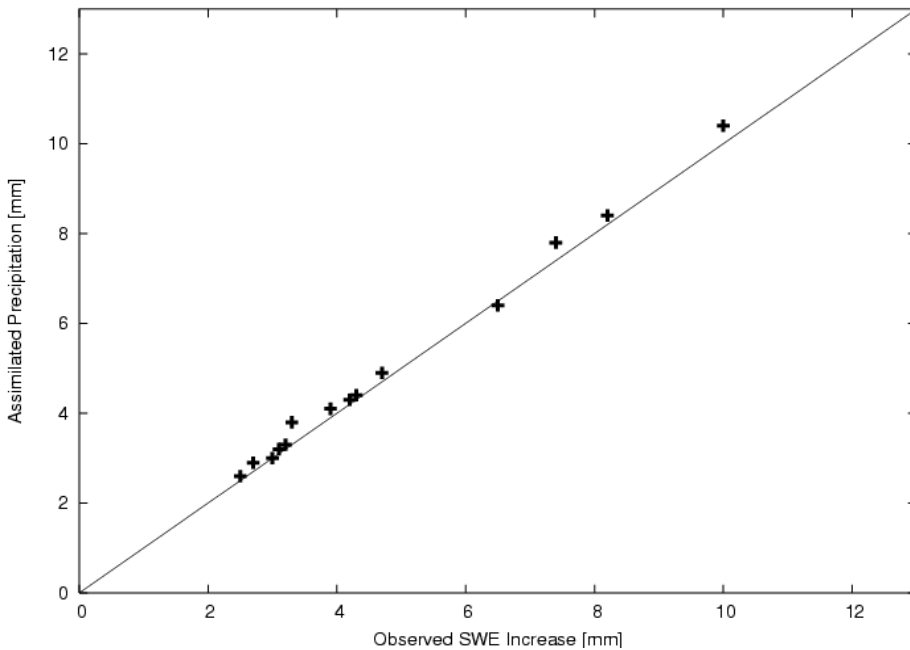


Data Assimilation

- Model Operator => Land Surface Model
Predict the state after Δt from initial conditions and forcing data.
- Model Operator => **Snow Model** → **SNOWPACK**
Predict the **snow properties** from initial conditions and forcing data.
- Observation Operator => Radiative Transfer Model
Calculate the expected T_B for **predicted snow state**.

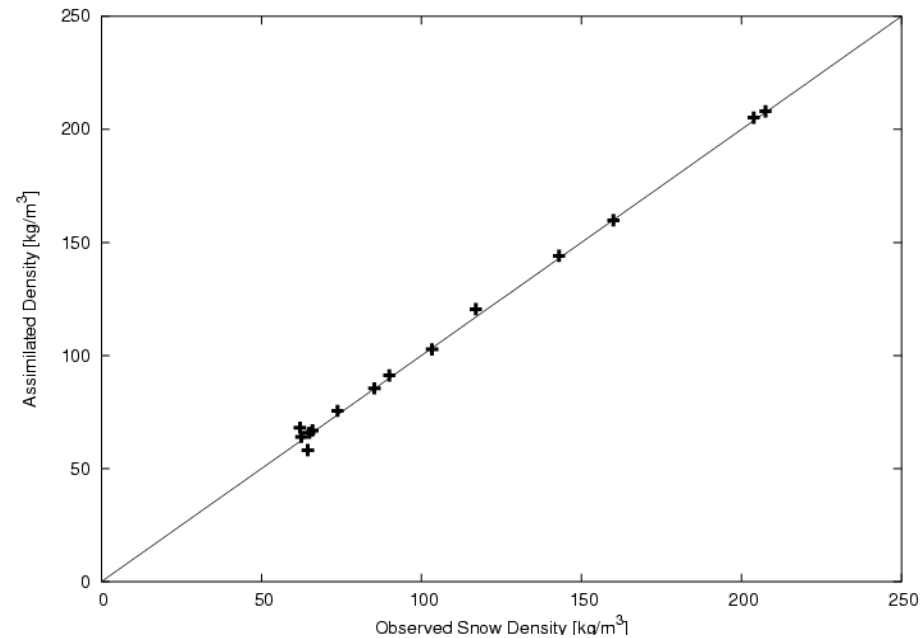


Results: Precipitation & Density



Density =>

<= Precipitation





An Element of WCRP initiated by GEWEX

Part-II(2007-2010)

•Undertake and conclude a Cold Region Study in Cooperation with the WCRP **Climate and Cryosphere (CliC)** Project and **the International Polar Year (IPY)** effort

- Reference Site Network in Arctic
- Satellite Algorithm Development
snowpack, snowfall
- Data Assimilation in Cold Region
- WESP in Cold Region

CliC-CEOP Closer Cooperative Framework Need!