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# Improving Small-scale Tropical Precipitation Forecast by Assimilating Frequent Satellite Microwave Observations



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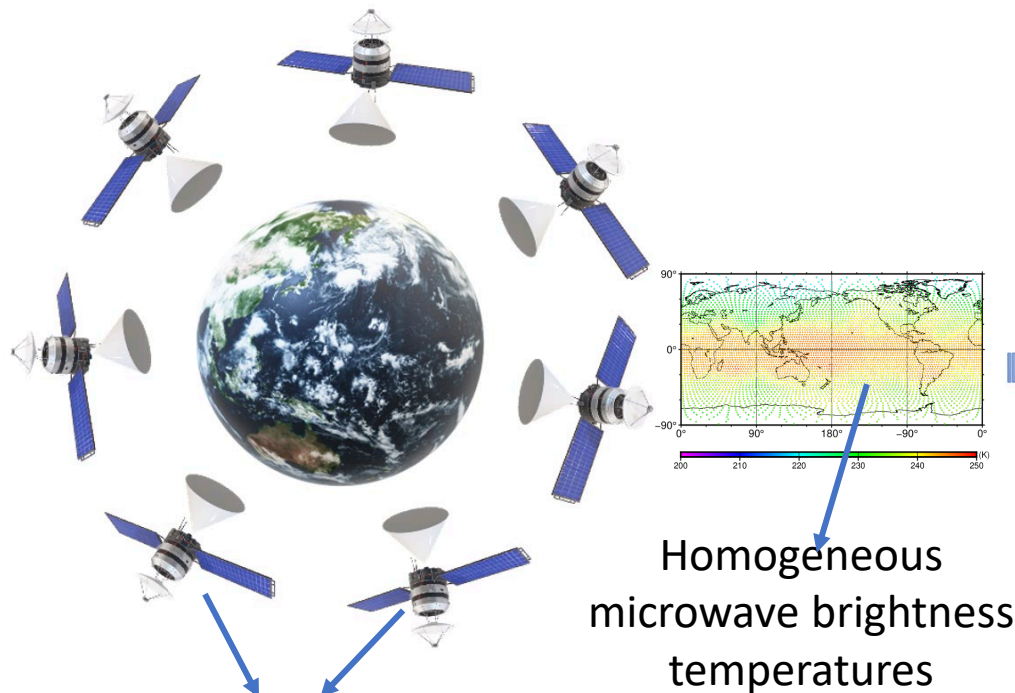


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**ALE Co. Ltd.**

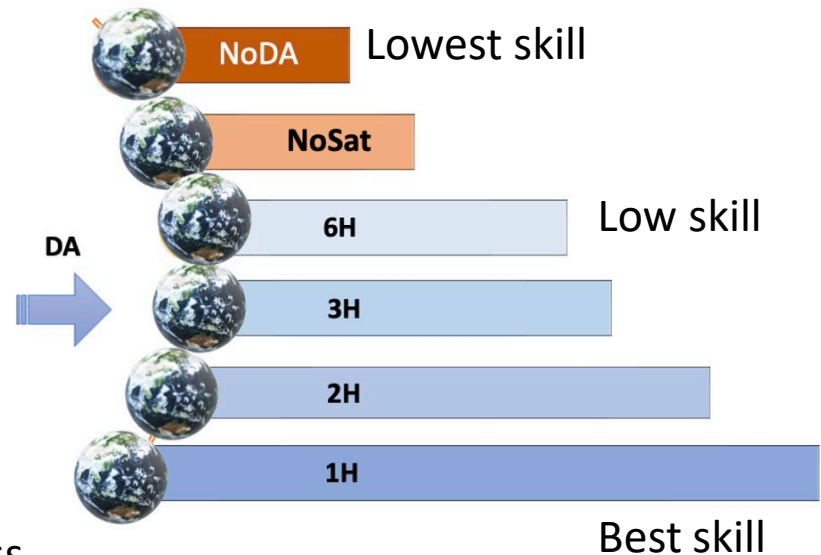
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# Scientific goal

Explore advantages of future constellation of small satellites that gives homogeneous frequent and dense observations in microwave channels to observe small convective systems.



Constellation of satellites observing in microwave channels.



Bar shows an improvement in the global forecast from brick-red to light-blue bar.

**NoDA:** No Data Assimilation

**NoSat:** No Satellite data assimilation

**6H, 3H, 2H, and 1H:** Assimilating Satellite microwave observations every 6-hourly, 3-hourly, 2-hourly, and 1-hourly frequencies.

✓ “We conducted a global observation system simulation experiment (OSSE) to explore above concept using global model NICAM-LETKF.”

✓ High frequency assimilation improves the forecast of small to large high intensity precipitation events.