

「みらい」MR15-04で観測された 下層雲と上層雲の日変動

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Data

- Cloud Fraction (Ceilometer: cloud base heights)

Low cloud: 0-2000m, Middle cloud: 2000-5000m

High cloud: 5000-

- Lidar (532 nm)
- Radiosonde

Acknowledgement

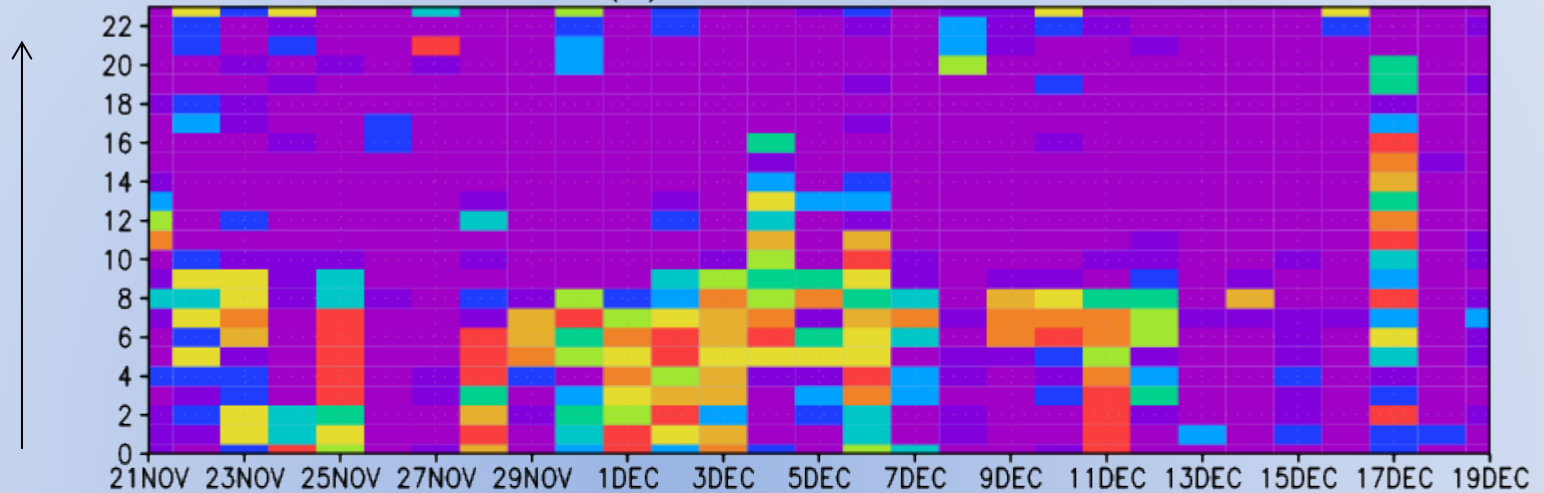
GODI観測技術員、船員各位、

勝俣主席研究者をはじめとした乗船研究者の方々

Observed diurnal cycle of cloud cover

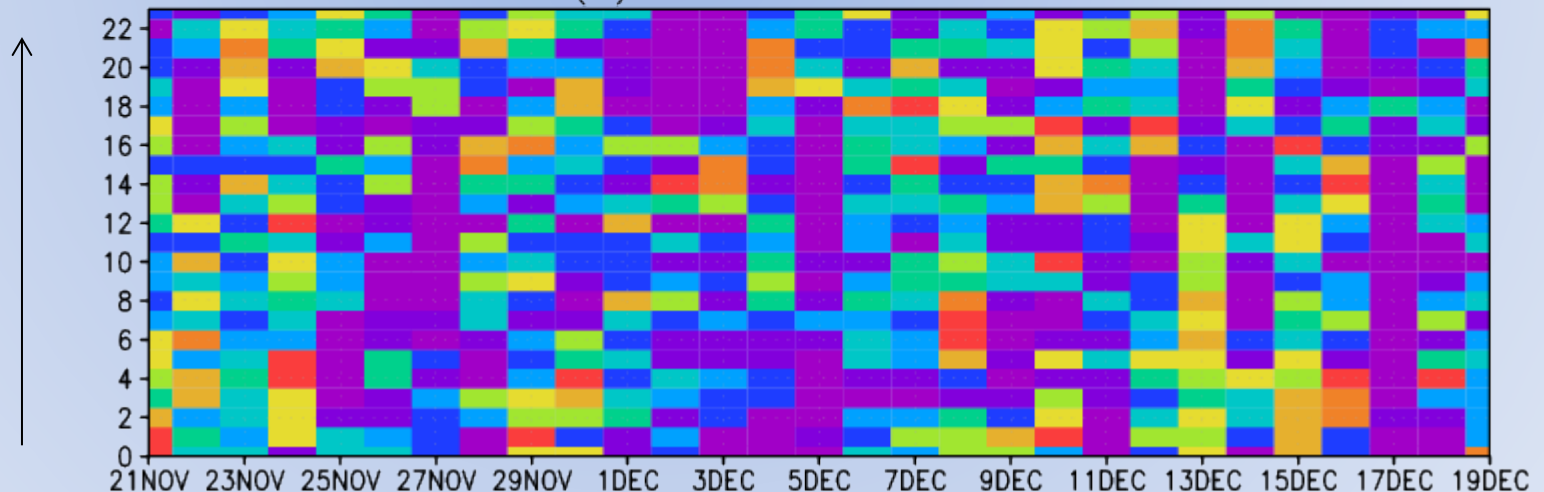
Fractions of Cloud Free Area

Hour
(UTC)



(b) Low-Cloud Fraction

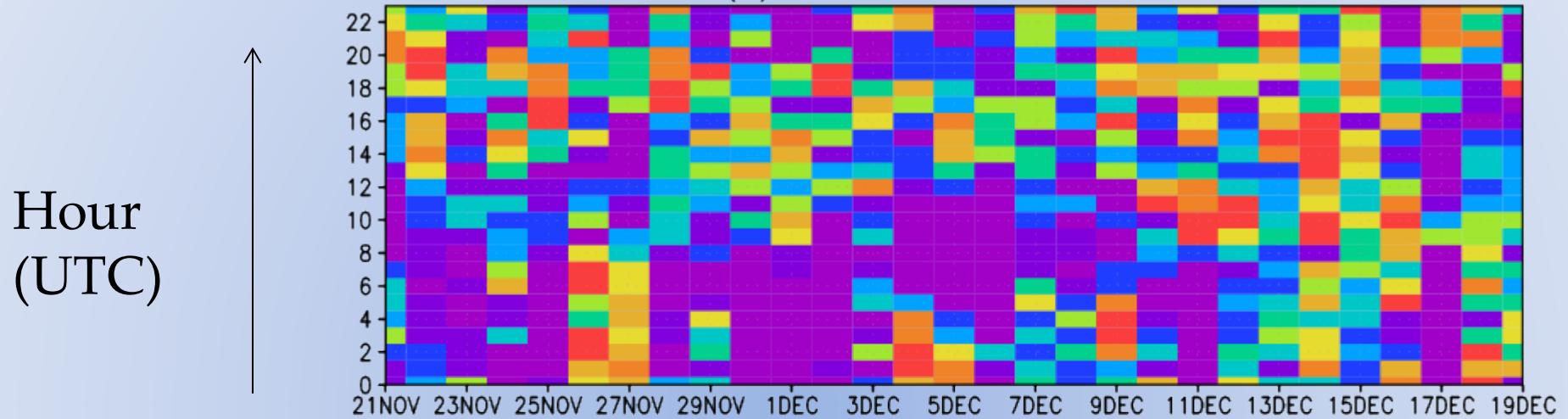
Hour
(UTC)



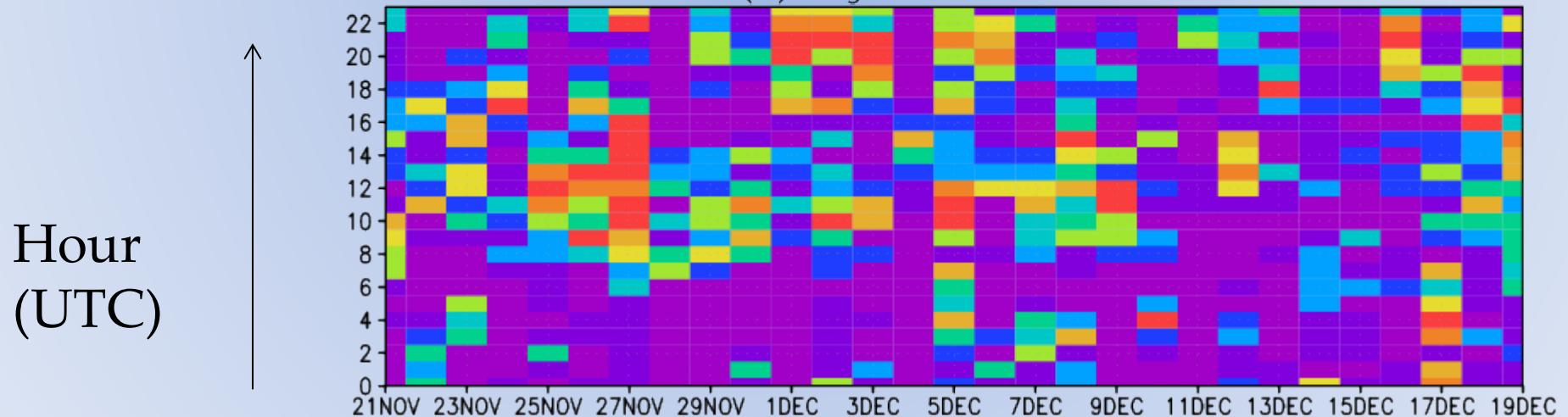
Low-Cloud Fraction (Cloud Base Height: 0-2000m)

Observed diurnal cycle of cloud cover

Middle-Cloud Fraction(Cloud Base Height: 2000-5000m)



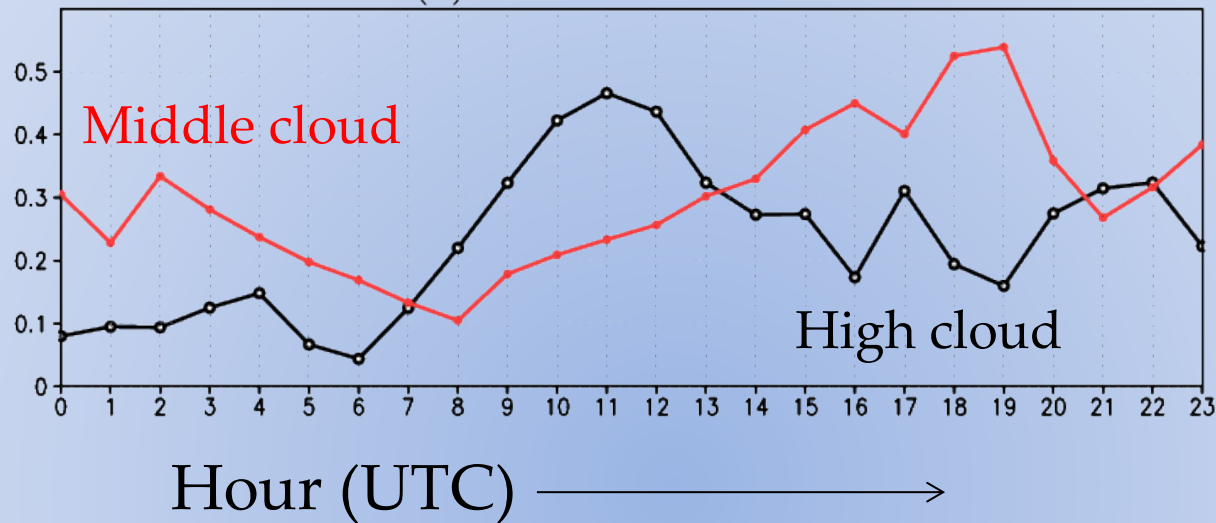
(d) high-Cloud Fraction



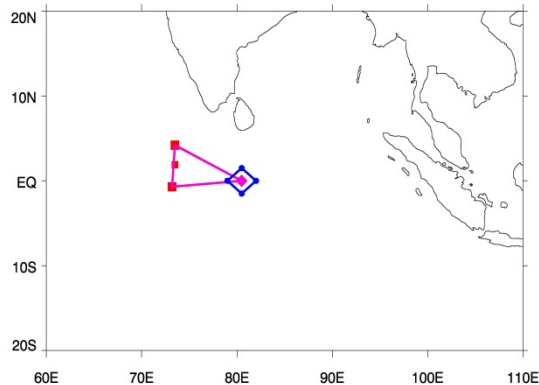
High-Cloud Fraction(Cloud Base Height: 5000-m)

Diurnal cycle of the middle and high cloud

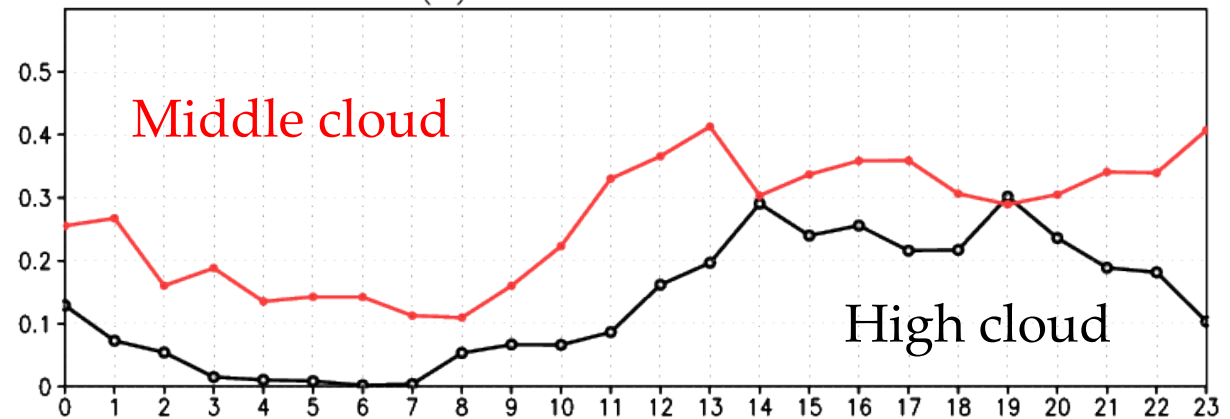
Cloud Fraction Mean



MISMO 2006

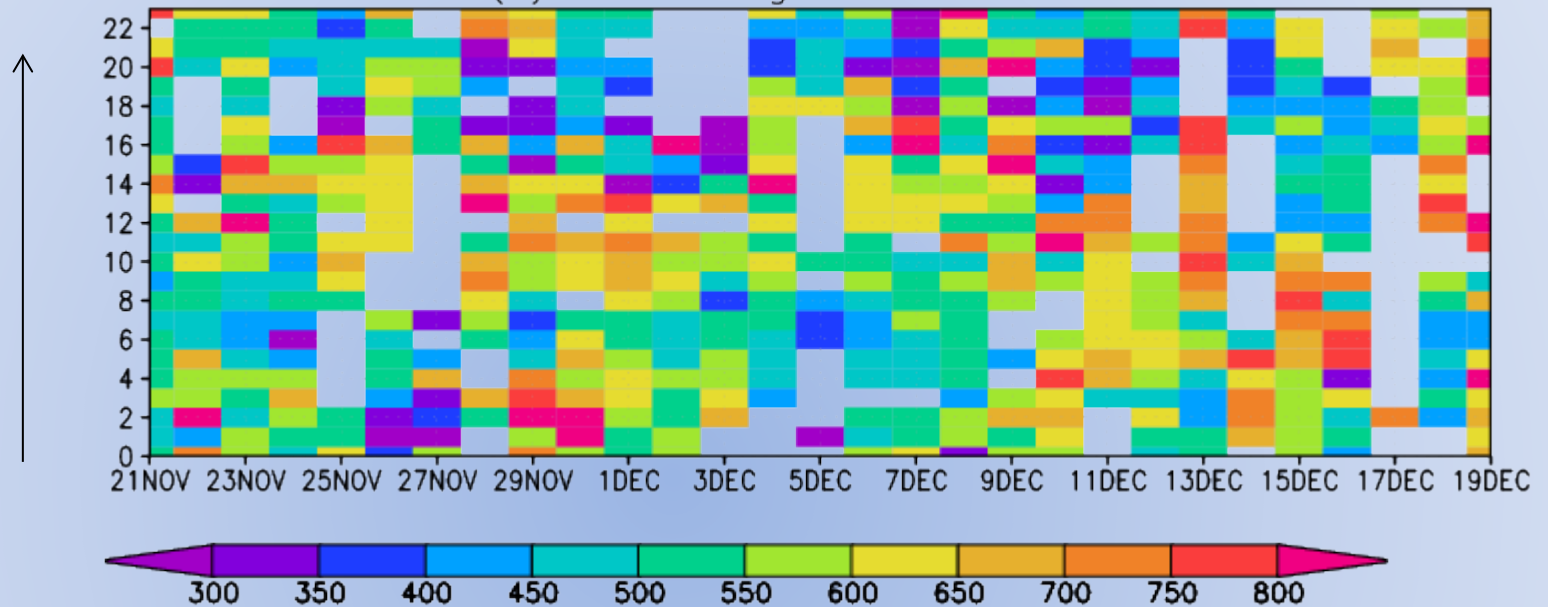


Cloud Fraction Mean



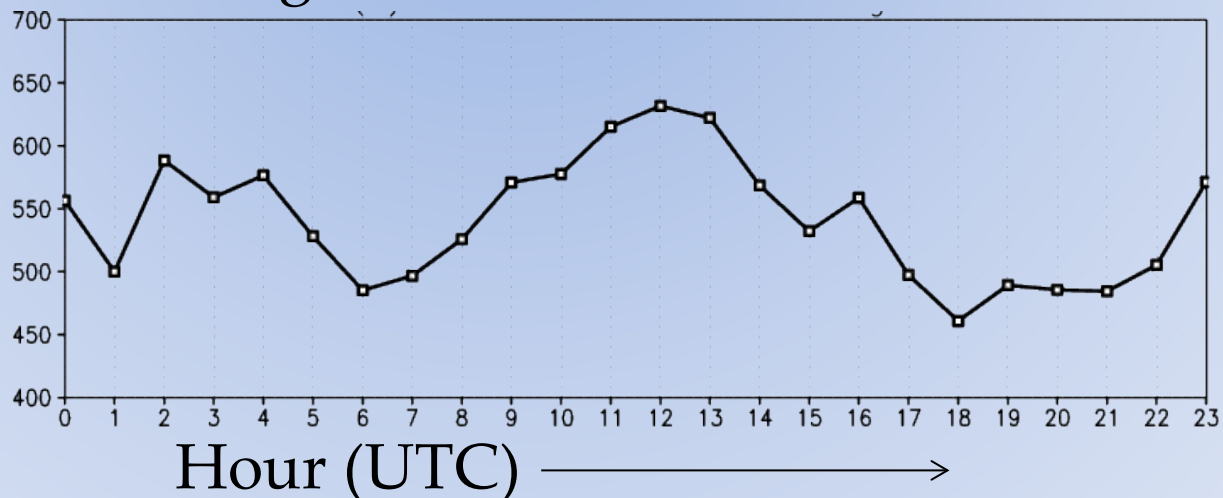
Diurnal cycle of height of lower clouds

Height of the cloud base at lower level



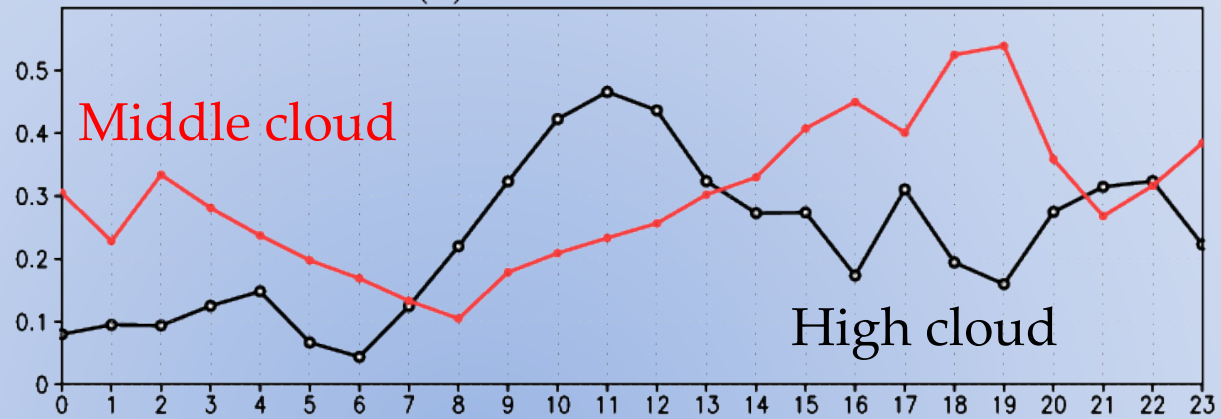
Mean height of the cloud base at lower level

Height (m)



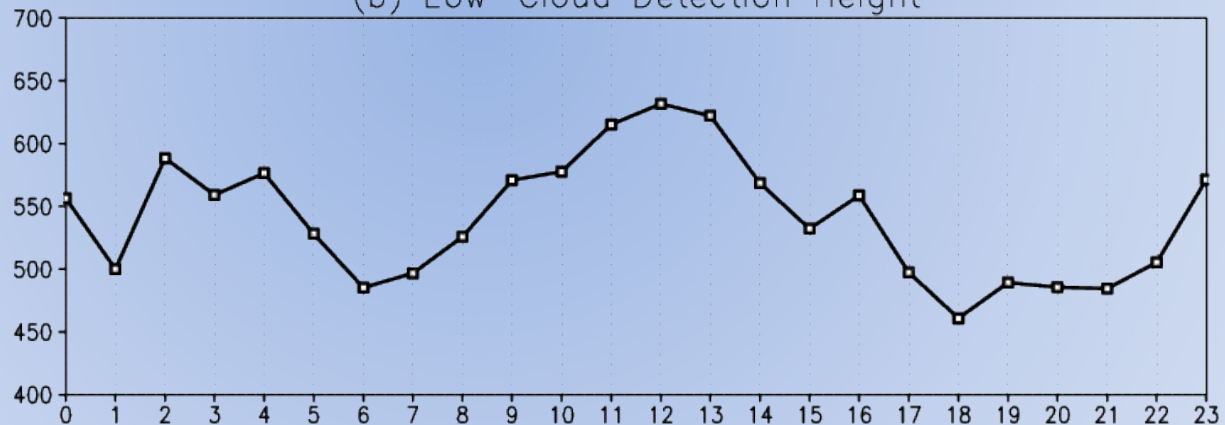
High cloud cover and lower cloud height

Cloud Fraction Mean



(b) Low-Cloud Detection Height

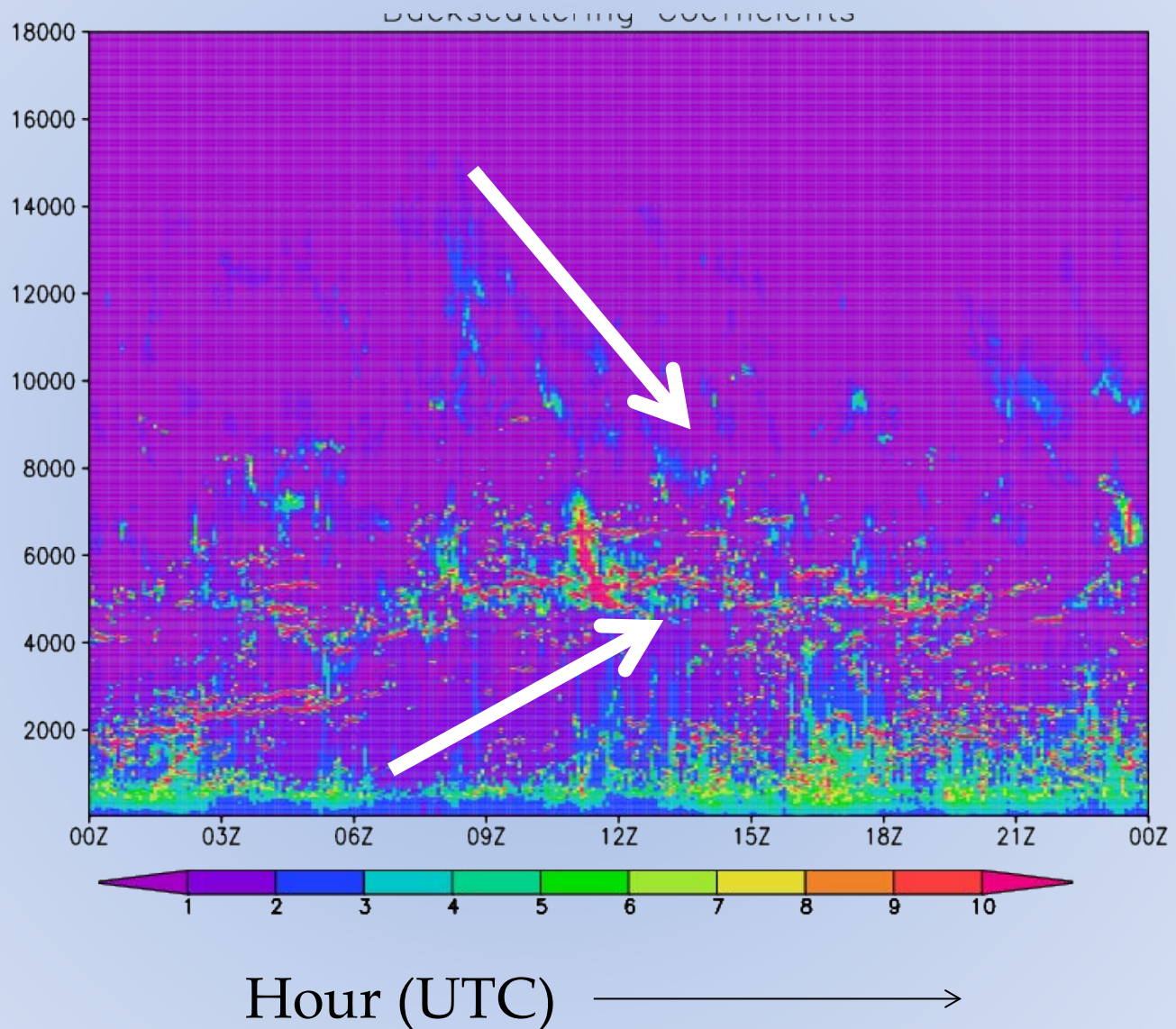
Height (m)



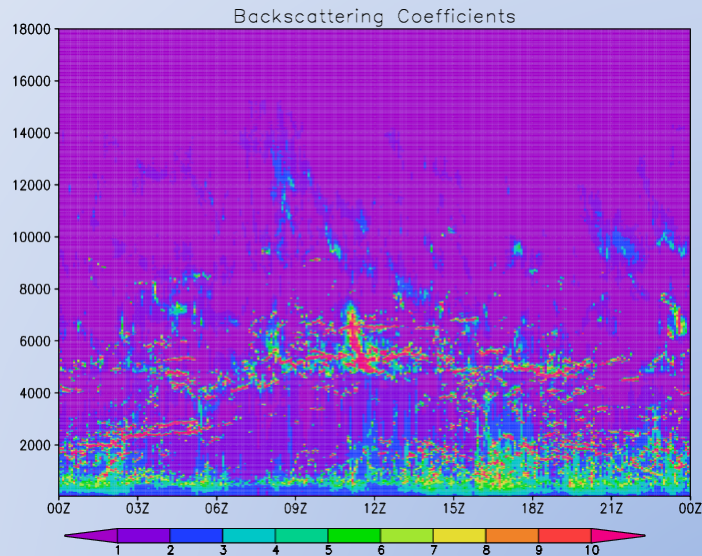
Mean height of the cloud base at lower level

Hour (UTC) —————>

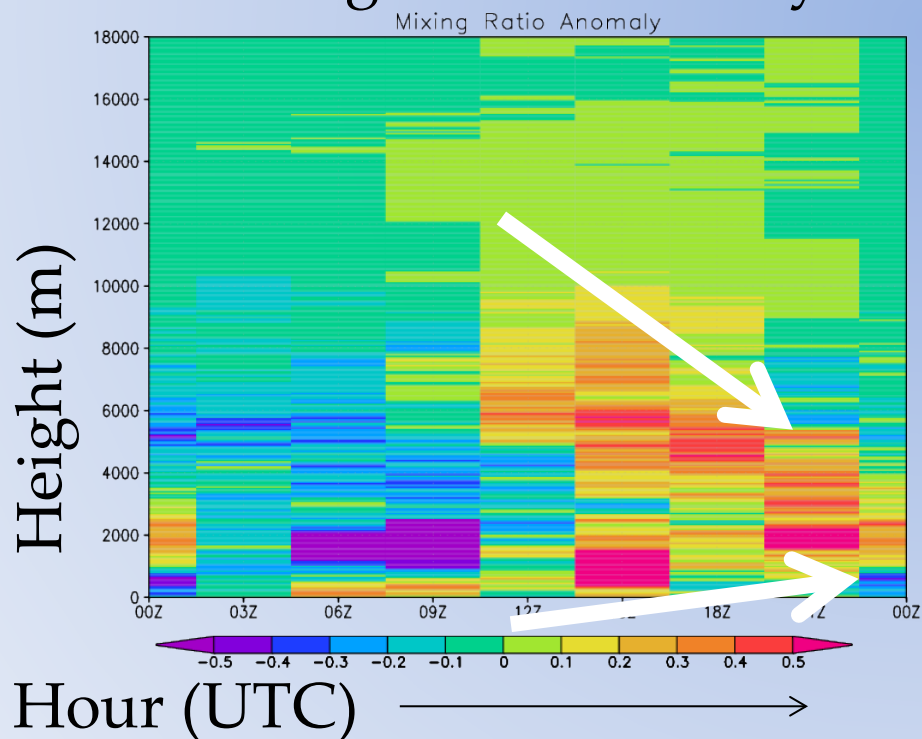
Height (m)



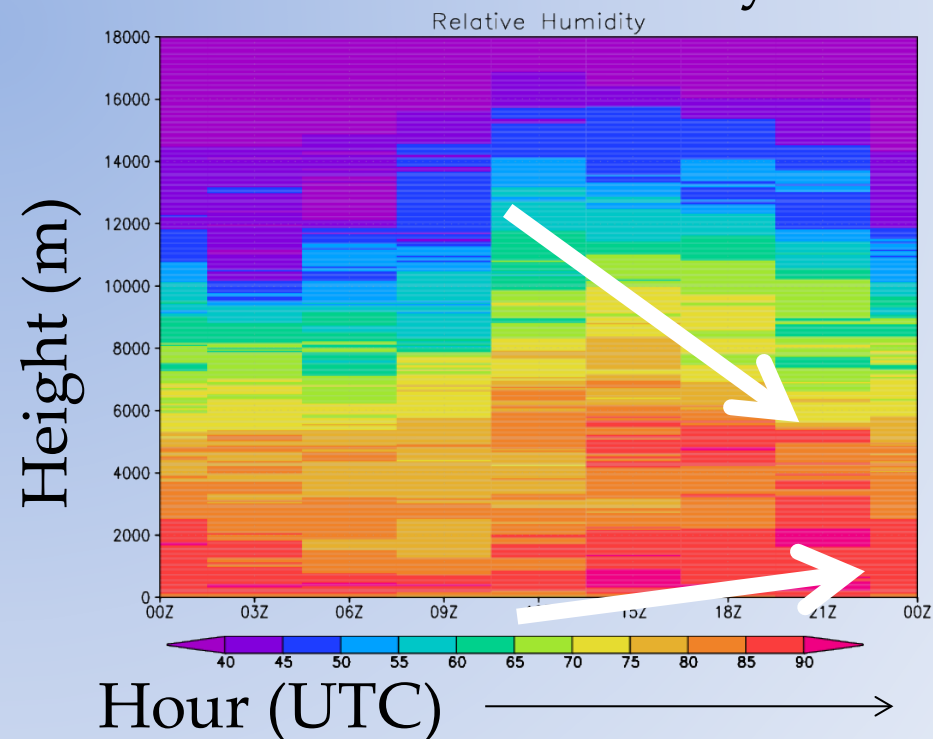
Diurnal Cycle of Water Vapor



Mixing Ratio Anomaly



Relative Humidity



Summary

- MR15-04の前半には、（過去の研究の通りの）陸上における顕著な降水の日周期と海上での再発達が観測された。
- 下層雲の発達は上層雲の到来と同期していた。
- ラジオゾンデによる水蒸気変動でも同様の特徴が確認できた。
- 現在のところ、「上層雲からの種まき効果」と「上層の加熱に伴う重力波」の2つのプロセスについて検討中である。