Case study of the MCS* of June 14-16 during TiMREX

*correction: multiple MCSs…

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OUTLINE OF TALK

• Radar summary: 6/14 “squall line” propagates far south of Taiwan; but by 18-21Z 6/15 new convection starts forming SW of S-POL, forms MCSs for ~18 hrs
• 6/14 convection stronger (more like typical land) than 6/16 convection (more like typical ocean)
• Hypothesis: Old “cold pool” forms partial barrier to moist SW airflow, extends island of Taiwan to SW (!)
• Sea-air flux partially restores warm, moist air upstream of Taiwan, enough for deep, rainy (up to 900 mm/day) convection and MCSs, although less intense than on 6/14.
中央氣象局
6/15 14:00
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TRMM profiles and S-POL Profiles compare closely, on average

But there are important differences between the situations where reflectivity maximum is aloft, or close to the surface!
Looks more like over-land Mei-Yu systems

SPOL Conv Cores

Looks more like oceanic systems all over the world(!)

SPOL Conv Cores
Precipitation–size Ice Particles

Percentage [%]

Time Series [Hour]

June 14: +
June 16: ♦
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