Session 6a
C Fairall

- **<u>(6A) Ocean-atmosphere-land processes 2</u> Room HUB 310 [DISCUSSION TIME 72 min for 12 min slots]**
- Robert Weller: *Vocals ocean, air-sea flux*
  - Synthesis 6 years buoy data
  - Similarity 85 and 75 W
  - Ocean variability at 150 m depth (eddy effects?)
- Chris Fairall: *Air-sea fluxes, cloud microphysics, cloud-aerosol interactions*
  - Air-sea flux data now available
  - COARE3.0 bulk model fits well
  - Wband cloud radar available; list of corrections for next version
- Andrew Hind: *Oceanography, marine trace gas production and biology*
  - Inubations to examine effects on DMS/chlorophyll productivity
  - No obvious correlations observed
- Xiaodong Hong: *Two-way coupled ocean-atmosphere interaction in the VOCALS area using COAMPS/NCOM*
  - Navy models examine regimes (HI near coast vs off coast - jet strength)
  - PBL depth, cloud amount, broken
- Ruiyu Sun: *Modeling of stratocumulus and air-sea interaction*
  - *NOAA GFS BL parameterizations*
  - *Added CTEI and zeroBD for stratoq and shallow convection - greatly improved low cloud structure*

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- Alan Bandy: *Boundary Layer structure and Chemistry*
  - Examined SO2, DMS, ozone, etc
  - Showed that things made sense in terms of BL structures, turbulence, etc
  - Interesting chemistry in POC
- Byron Blomquist: *Overview of the SO2 and DMS measurements on the C-130 and R/V Brown*
  - Ocean DMS increases to NW
  - SO2 very low, weak long. dependence; stronger above BL
  - Mean profiles
  - RF12, 14 more polluted
- Rainer Volkamer: *Direct observations of reactive trace gases over the eastern Pacific ocean*
  - Mostly discused CHOCHO, IO
  - Satellite problems – underestimate
  - Apparent (unknown) oceanic source – can involve particle growth
- Mingxi Yang: *Direct measurement of the sea-to-air flux of dimethyl sulfide (DMS) on board of R/V Ronald H. Brown.*
  - *High DMS flux in pockets*
  - *Normal transfer coefficient*
  - *Diurnal cycle allows estimate of entrainment – 0.4 cm/s*

Synthesis?

- Chemistry talks showed progress; DMS dominates SO2 except near coast; hypoth essentially confirmed. DMS provides great index for decoupled (3-layer) structure associated with POCs. DMS likely **not** be whole story. Sulfate aerosol budget another issue!
- Model talks showed rationalization of stratoq vs shallow convection key to cloud amounts, etc. Cloud properties very sensitive to strength/location of HI.
- Buoy obs and flux calculations show 40, 50 W/m^2 heat imbalance. Difference between 85 and 75 small but within accuracy. Still not clear how eddies provide imbalance.