

NOAA Ship Ronald H. Brown
Observations for the
NAME Field Program

Monsoon Core Issues:

- *Gulf California circulation
- *Role of GCLLJ
- *Sources of moisture
- *Fluxes of energy and water
- *Effects of aerosols on precipitation in the monsoon core

RHB Measurements (CSU/ETL proposal)

- *Scanning C-band Doppler radar
- *Air-Sea fluxes
 - sensible heat, moisture, momentum, IR and solar radiation
 - Precipitation
 - Surface Waves
 - Bulk meteorology (U, T, Q, Ts, etc)
- *PBL properties (U, T, Q mean and turbulent profiles)
 - sondes, wind profiler
- *Precipitation microphysics, clouds, convective dynamics
 - 35 GHZ cloud radar
 - Microwave radiometers (precipitable Water, LWP)
 - Ceilometer (cloud base height statistics)

Other Possible Measurements

*Dual polarization backscatter lidar (ice microphysics, aerosol profiles)

*Boundary-layer Aerosols

 surface sampling - size spectra

*Ocean mixed-layer properties

*S-band vertically pointing precip Doppler radar

UNAM Research Vessel Measurements

*Air-Sea fluxes

sensible heat, moisture, momentum

IR and solar radiation

Precipitation

Surface Waves

Bulk meteorology (U, T, Q, Ts, etc)

*PBL properties

U, T, Q profiles; inversions (sondes, wind profiler)

*Precipitation microphysics, clouds, convective dynamics

S-band

Microwave radiometers (precipitable Water, LWP)

Ceilometer

*Aerosols

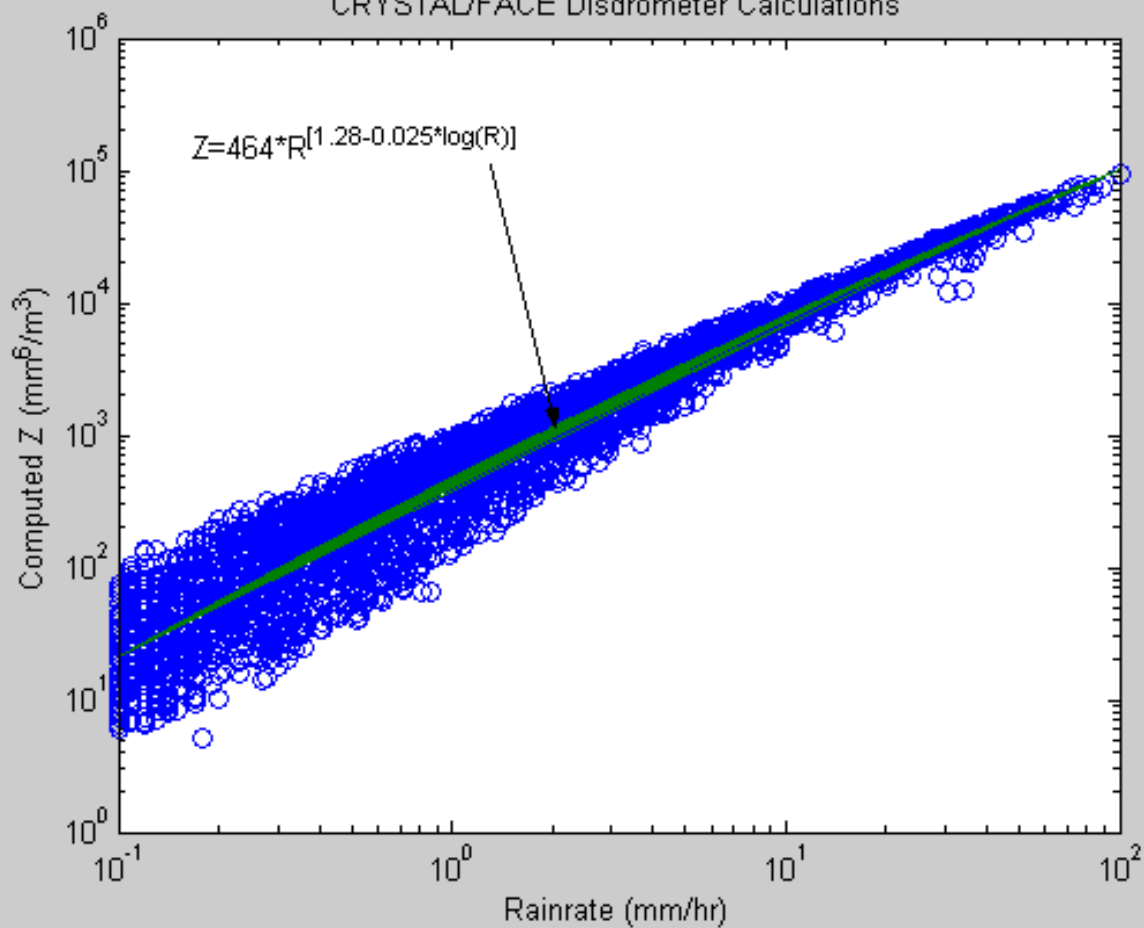
surface sampling - size spectra

*Ocean mixed-layer properties

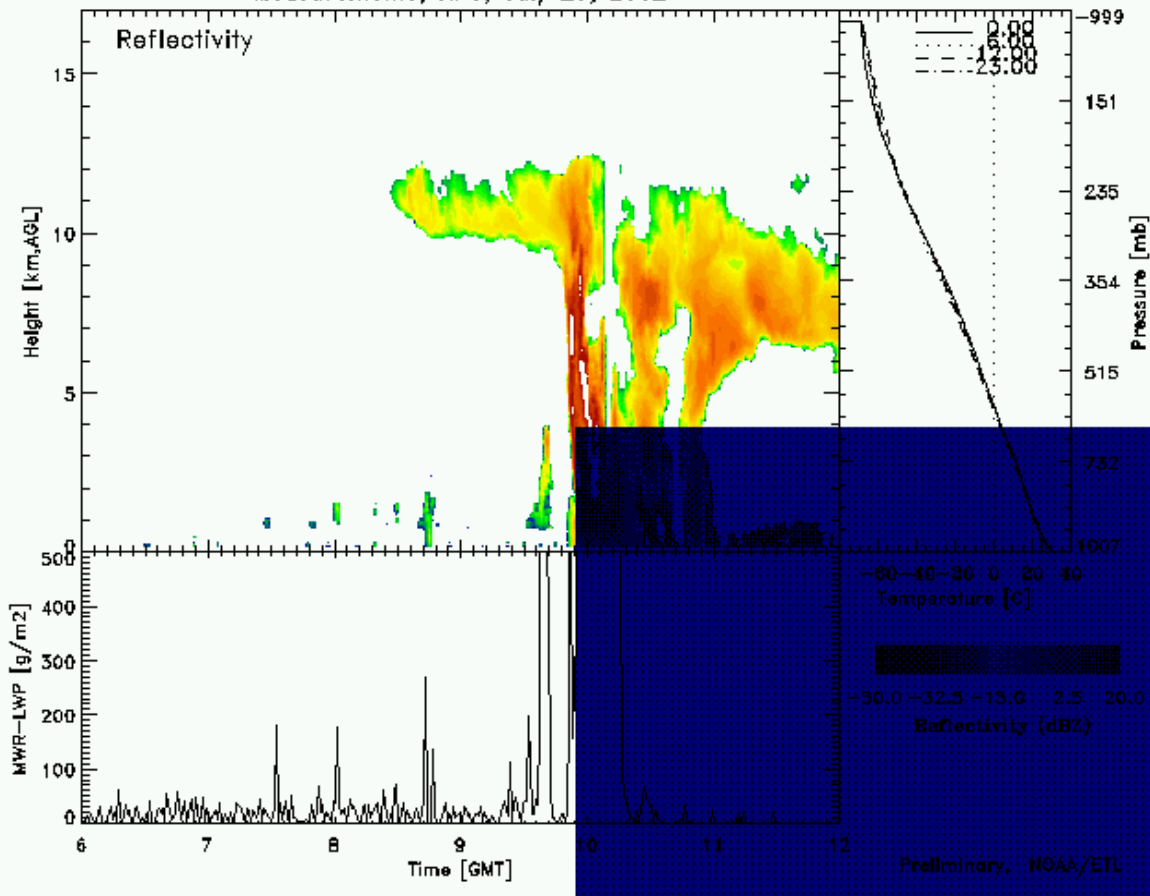
Table 1. Instruments and measurements for air-sea interaction, cloud, and precipitation studies in NAME. Wave hatching denotes ship system.

Item	System	Measurement
1	Air-sea flux system	Motion corrected turbulent fluxes
2	Pyranometer & Pyrgeometer	Downward solar radiative, IR flux
3	Bulk meteorology	SST, T _{air} , RH, wind speed
4	Ceilometer	Cloud-base height
5	Raingauges	Rainrate
6	35 GHz Doppler cloud radar	Cloud microphysical properties
7	20, 31, 90 GHz μ wave radiometer	Integrated cloud liquid water & vapor
8	Upward pointed IR thermometer	Cloud-base radiative temperature
9	Atmospheric Particle Samplers	Aerosols
10	Dual Polarization Aerosol Lidar	Aerosols, water/ice cloud discrim.
11	DIAL Lidar	Water vapor profiles
12	Ocean Profiling Radiometer (SPMR)	Optical properties
13	Rawinsonde*	Wind, temperature, humidity prof.
14	0.92 MHz Wind Profiler*	Profiles U, direction, turbulence
15	Scanning C-band Doppler radar*	Precipitation 3-D structure
16	CTD	Ocean T, S profiles
17	ADCP	Ocean current profiles
18	Satellite	NOAA, GMS data
19	IMET	Meteorology
20	SCS	Navigation
21	Thermosalinograph	Near-surface T, S
22	AOML underway CO ₂ system	Water-air CO ₂ concentrations

CRYSTAL/FACE Disdrometer Calculations



Measurements, NPC, July 29, 2002



Ice and Liquid Effective Radius, NPC, July 29, 2002

