

MAGIC Breakout Session

2014 Atmospheric System Research (ASR)
Science Team Meeting

Potomac, VA
Monday, March 10, 2014
7:30-9:00 pm

Agenda

MAGIC: Current Status and Future Plans

Ernie Lewis (Brookhaven National Laboratory)

Retrievals from Sunphotometer Cloud Mode Observations and Synergy with HSRL-KAZR during MAGIC

Christine Chiu (University of Reading)

Evaluation of Using Dual-IRTs to Measure Sea Surface Skin Temperature

Laura Riihimaki (Pacific Northwest National Laboratory)

Preliminary Analysis of Transitions from Sc to Sc-Cu Cloud Conditions during MAGIC

Xiaoli Zhou (McGill University)

Microphysical Properties of Drizzles underneath the MBL Clouds during MAGIC

Xiquan Dong (University of North Dakota)

Drizzle Measurements with the HSRL and the KAZR: Sensitivity to Assumptions

Ed Eloranta (University of Wisconsin)

Exploring Droplet Variability at the Cloud Edge and through the Cloud Transition Zone

Patrick McBride (NASA-GSFC)

MAGIC Data Gone Ashore

Mary Jane Bartholomew (Brookhaven National Laboratory)

MAGIC

Current Status and Future Plans

Ernie R. Lewis

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Brookhaven National Laboratory

MAGIC Timetable

| | |
|----------------|--|
| October, 2013 | AMF2 removed from <i>Spirit</i> |
| November, 2013 | MAGIC session at ASR Fall Working Group Meeting |
| December, 2013 | MAGIC poster session at AGU Fall Meeting MAGIC meeting at AGU |
| February, 2014 | MAGIC presentation at Ocean Sciences Meeting |
| March, 2014 | MAGIC session at ASR Fall Working Group Meeting |
| May 5-7, 2014 | First MAGIC Science Workshop at Brookhaven Ntl Lab |

MAGIC-2?

MAGIC-Lite?

MAGIC Presentations at Meeting

Cloud transitions between high-coverage stratocumulus and low-coverage cumulus over the Eastern Pacific Ocean during MAGIC

Xiaoli Zhou, McGill University

11:30-11:45 Wednesday

Characterizing albedo and precipitation susceptibility of marine boundary layer clouds using MAGIC data

Trevor Ferguson, University of Utah

11:45-12:00 Wednesday

MAGIC posters: Tuesday and Wednesday, 2-4 and 4-6

MAGIC News

Some MAGIC publications already near submission!!

First MAGIC Science Workshop May 5-7, 2014 at BNL (webpage soon)

Data/metadata:

- MAGIC Data Introduction Files

- MAGIC Leg Date and Time Summaries (dates/times of start and end of legs)

- MAGIC Instrument Status Tables

 - (see me if you're not on the MAGIC Science Distribution List)

- Sonde tables to come soon

MAGIC Navigation Best Estimate magnavbe VAP (at 10 Hz and 1 min time resolutions)
includes leg numbers, "on route" flag, lat/lon, etc. (Tami Toto)

Mike Reynolds: met, radiation, fluxes, optical depths (see his webpage)

ECMWF along-track data (Maik Ahlgrimm).

ECMWF along-track forecast data now available

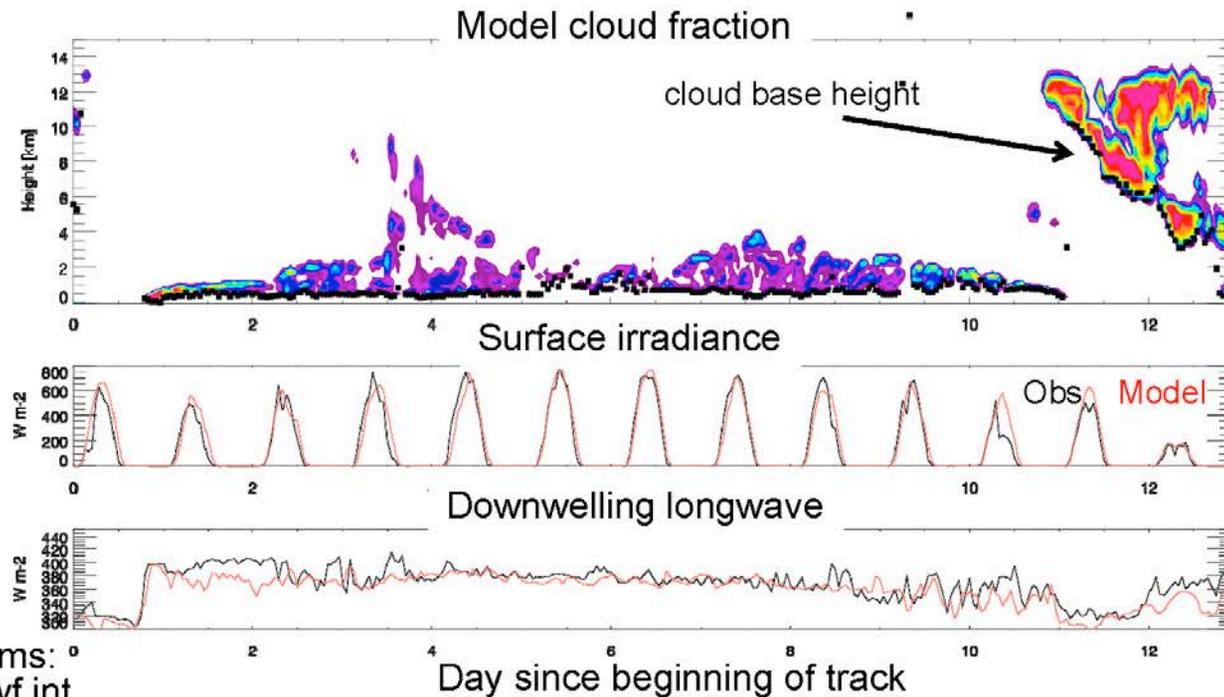
Upper air fields: T, q, u, v, w, CC, CLWC, CIWC, rain, snow

Surface fields: T 2m, D 2m, u10, v10, surface radiation and fluxes, BLH, cloud base height, surface precip etc.

Operational forecast, initialized at 12 UTC, forecast steps 12-33 (verification time 00-23UTC). Nearest model grid point at full resolution (~16km) picked hourly

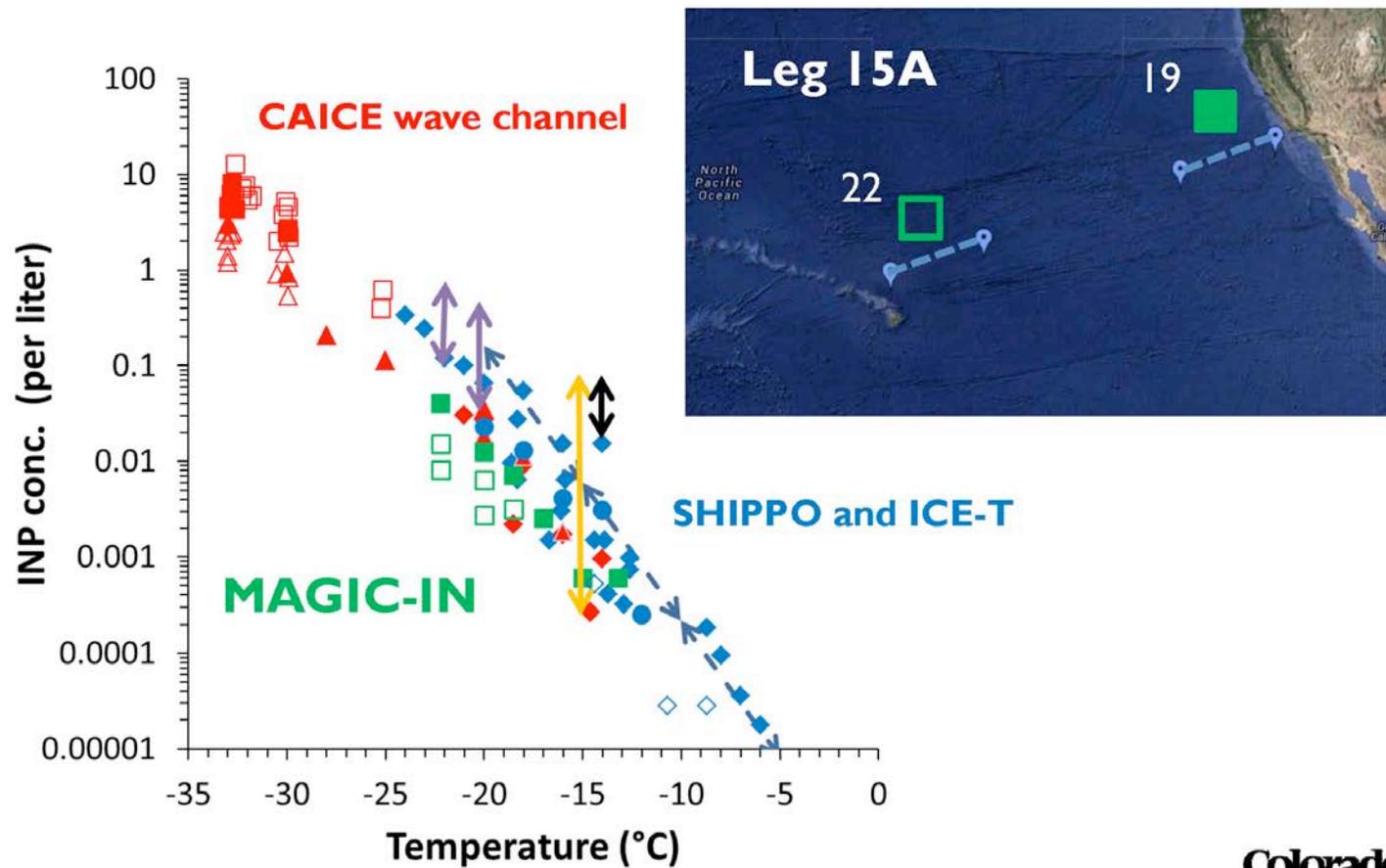
Sondes were
not assimilated

Quick look: Track 5
Nov 3-16 2012

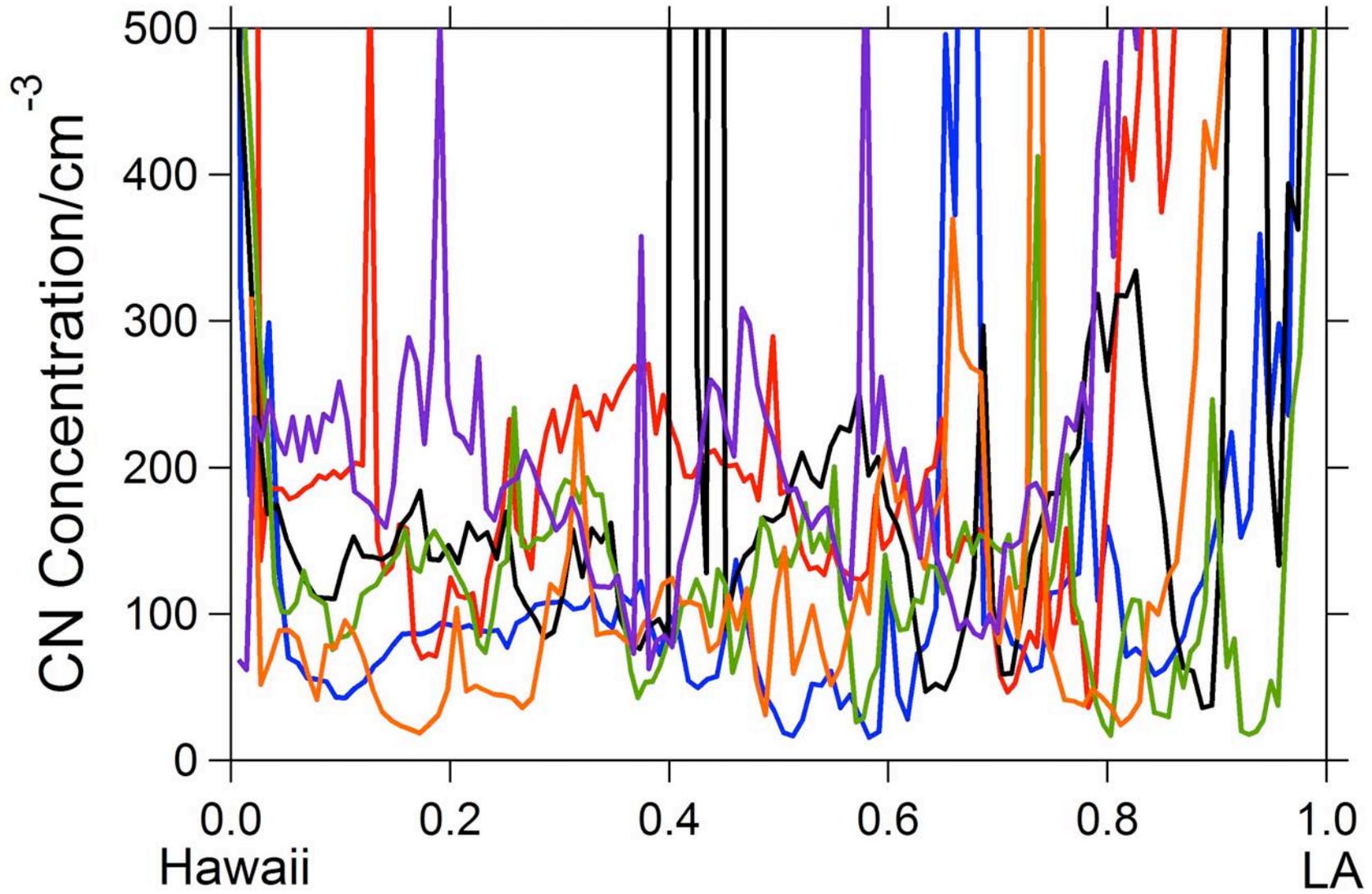


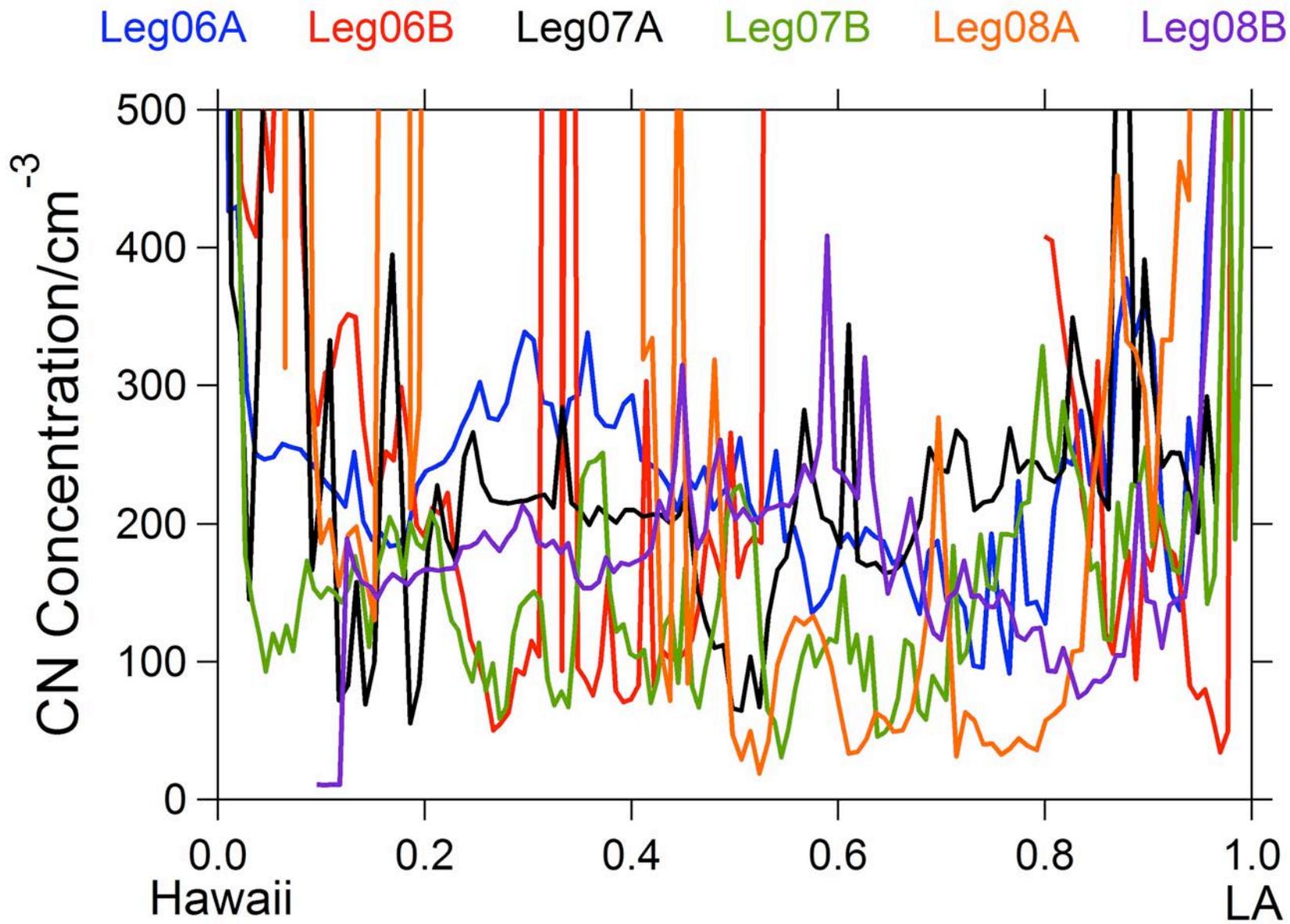
For questions or problems:
Maik.ahlgrimm@ecmwf.int

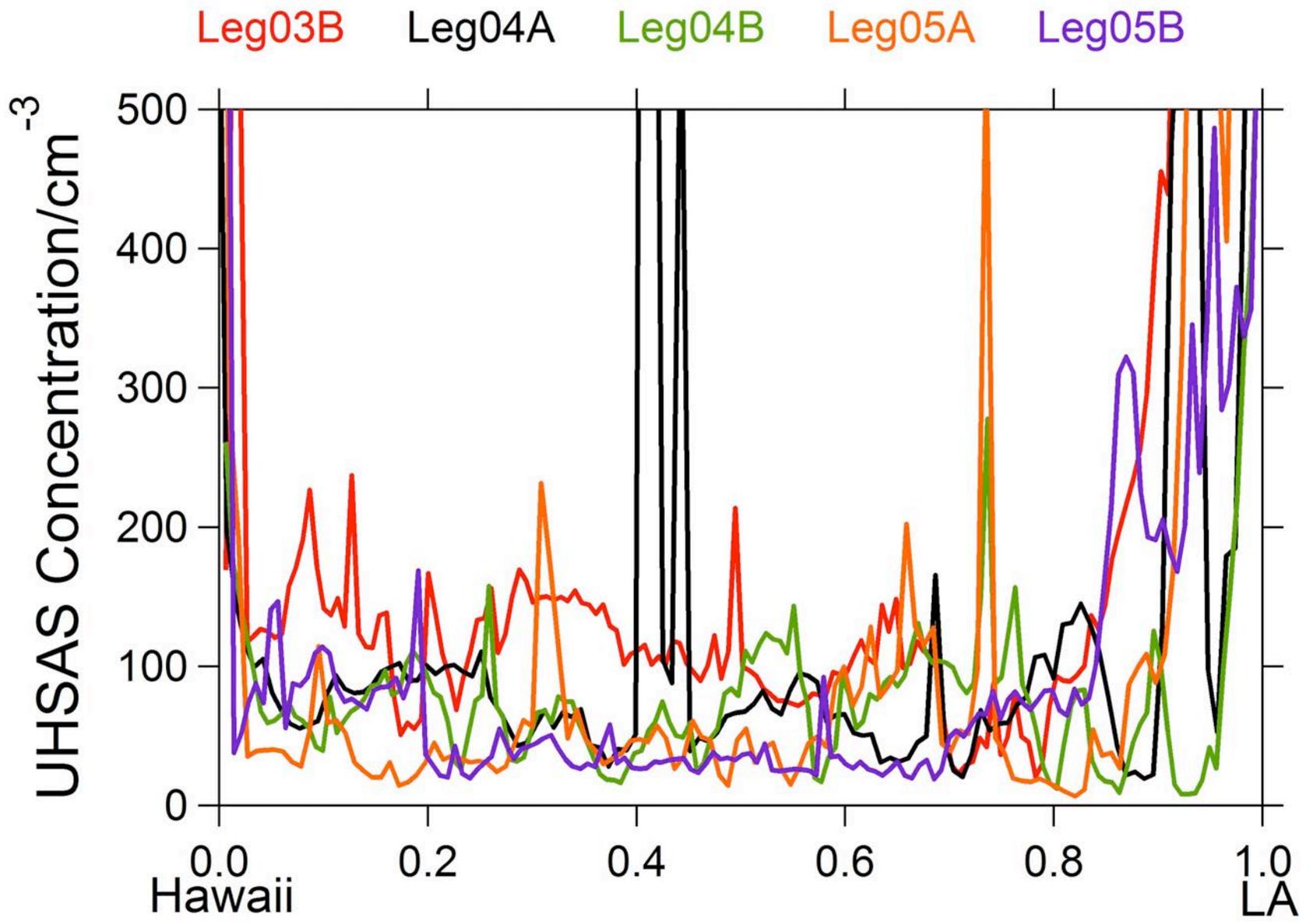
Comparison for a few recent MAGIC samples

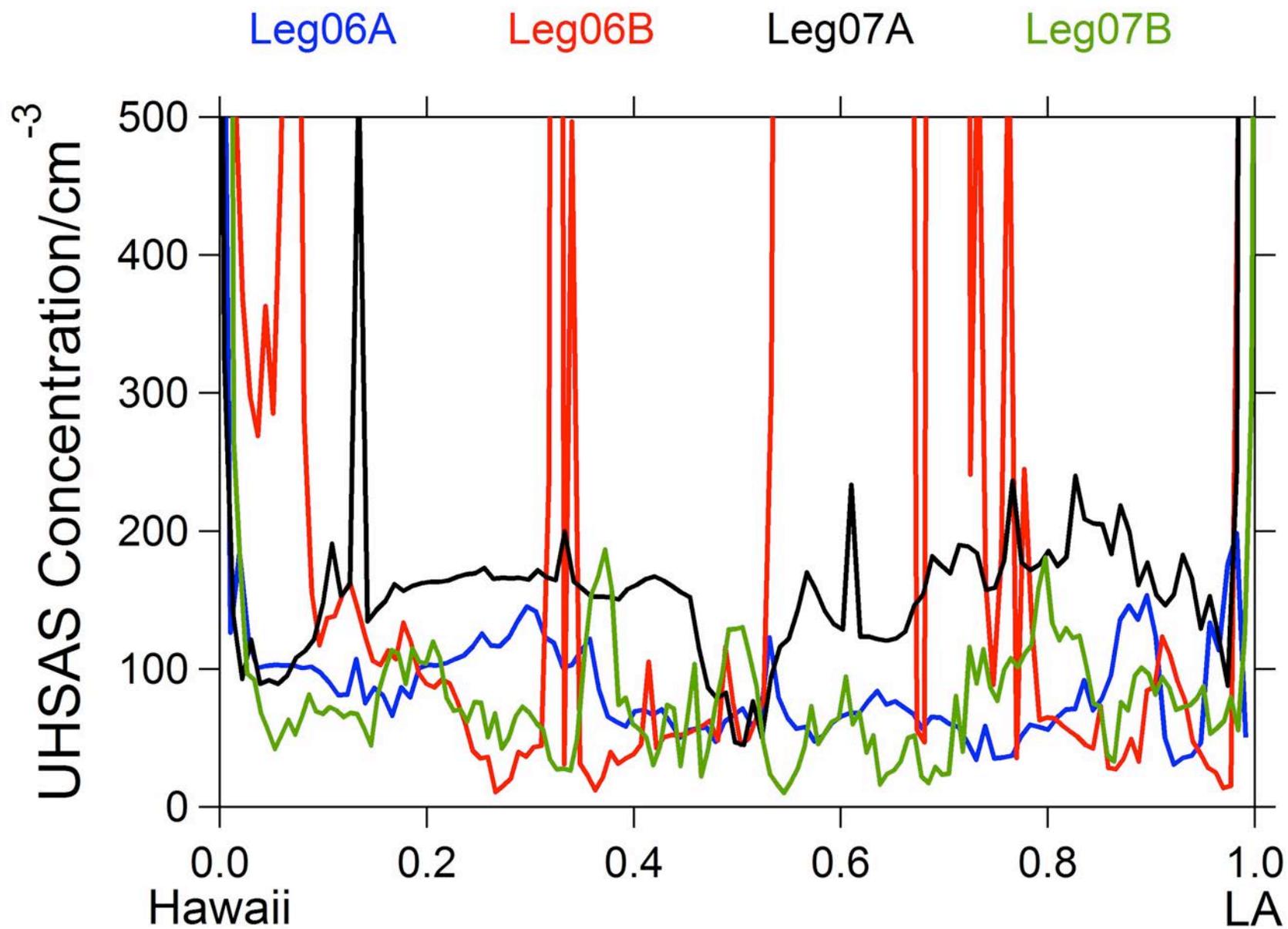


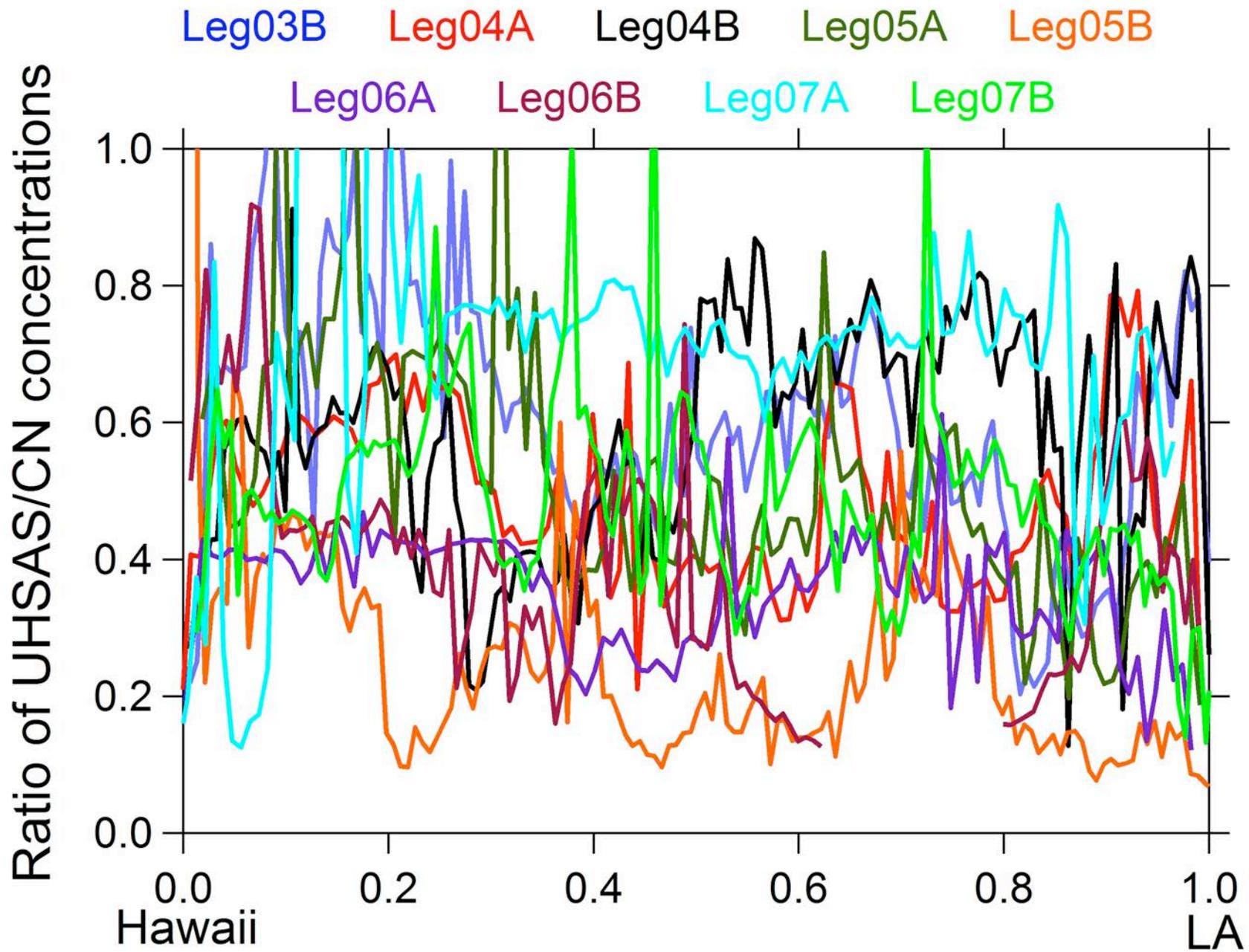
Leg03A Leg03B Leg04A Leg04B Leg05A Leg05B



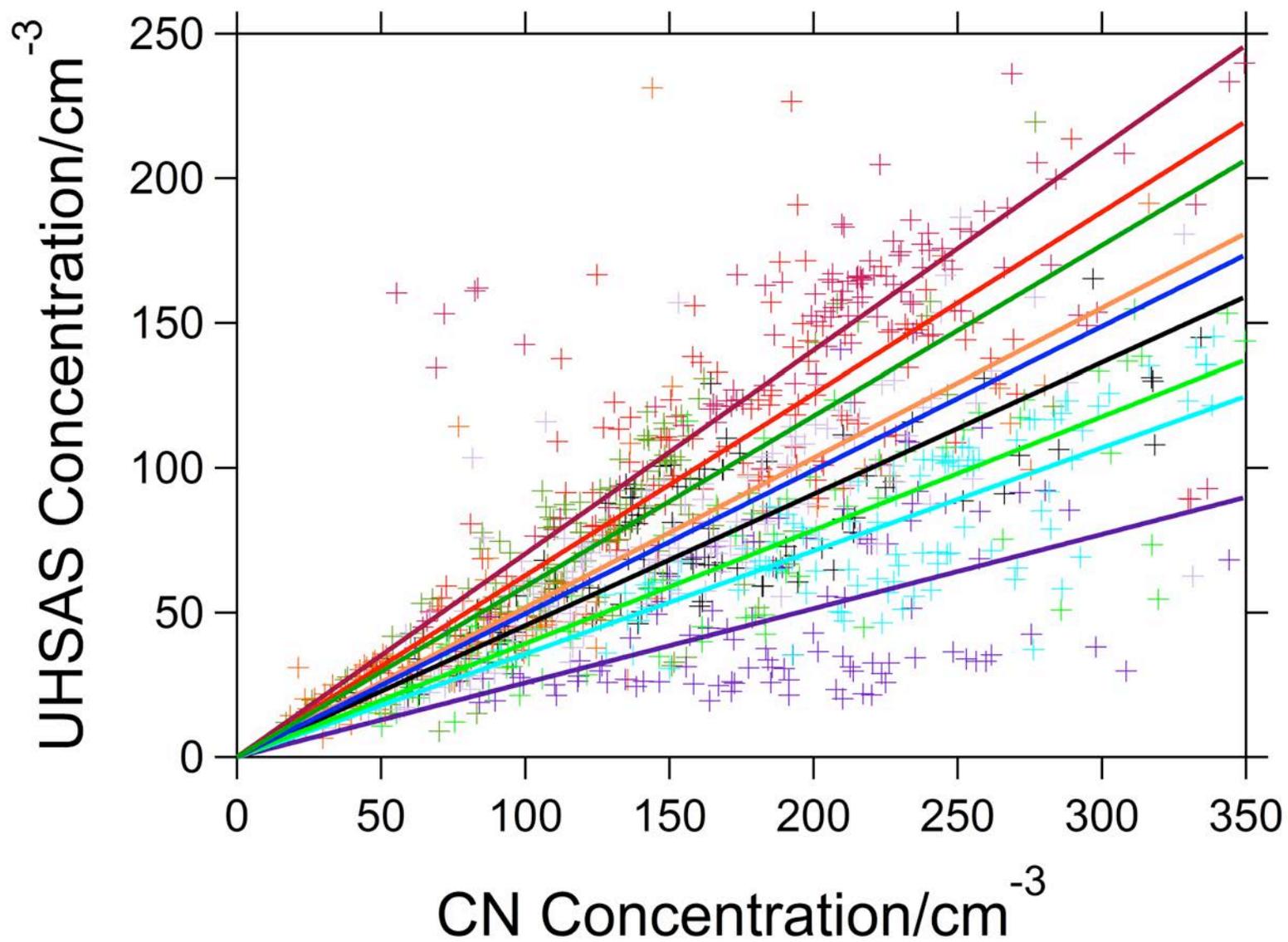








Leg03B Leg04A Leg04B Leg05A Leg05B
Leg06A Leg06B Leg07A Leg07B



Conclusions

Much leg-to-leg variability

Typical concentrations for $D_p > 10$ nm are 100-300 cm^{-3}

Typical concentrations for $D_{\text{opt}} > 60$ nm are 50-150 cm^{-3}

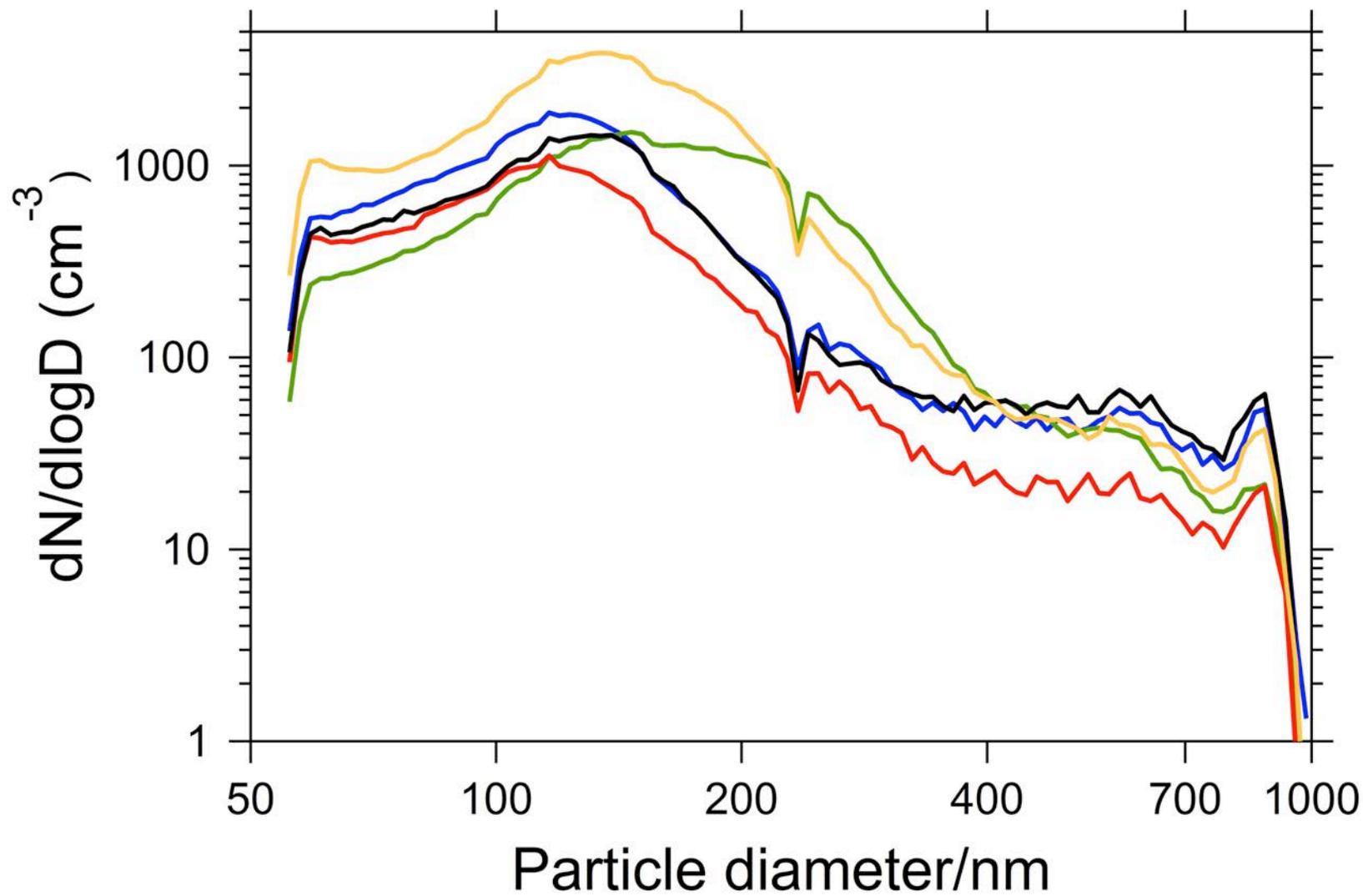
Ratios of these quantities show much variability (20-80%)

Two quantities show good correlation

No obvious longitudinal trends

Presence of spikes (ship tracks?)

UHSAS Size Distributions



UHSAS Size Distributions

