

**NSF U.S.-Japan Workshop on the Tropical Tropopause Layer:
State of Current Science and Future Observational Needs**

October 15-19, 2012

Pacific Room East-West Center, Honolulu, Hawaii

NOTE: Each presenter is asked to prepare a 45 minute presentation, tutorial in nature. Each speaker will also be asked to provide key current science questions at the end that can be distilled and mapped to field projects. There will be 15 minutes of discussion after each lecture

MONDAY: TTL Structure, past observations, historical perspective

Bus leaves hotel at 8:30

9:00-9:30 Introduction and logistics, motivation and scope of meeting.

9:30-10:15 Introduction of participants

10:15-10:45 Group Photo & Break

10:45-11:45 *TTL Overview / Radiative Transfer* **Andrew Gettelman**

11:45-1:00-LUNCH

1:00-2:00 *Cirrus Clouds and Convection in the TTL* **Leonard Pfister**

2:00-3:00 *Water Vapor* **William Randel**

3:00-3:30 Break

3:30-4:30 *TTL Transport & Wave Processes* **Masatomo Fujiwara**

4:30-5:30 *Trace Species and Chemistry (Besides Water)* **Anne Thompson**

TUESDAY: Critical outstanding TTL questions

Bus leaves hotel at 8:30

9:00-10:00 *Stratospheric Dynamics (Including Waves)* **Joan Alexander**

10:00-11:00 *In-Situ Aircraft Observations* **Karen Rosenlof**

11:00-11:30: Break

11:30-12:30 *Ground Based Observations* **Fumio Hasebe/Takashi Shibata**

12:30-1:30 LUNCH

1:30-2:30 *Satellite Observations* **Masato Shiotani**

2:30-3:30 *Simulations (Idealized to Global)* **Eric Jensen**

3:30-4:00 Break

4:00-5:00 *Data Assimilation* **Kazuyuki Miyazaki**

5:00-5:30 Poster Introductions

5:30-7:30 Poster Session / Reception

WEDNESDAY: Observational plans for 2012-2015, Discussion

Bus leaves hotel at 8:30

9:00-9:15 Presentation of science questions **Organizing Committee**

Presentations by representatives for individual observational campaigns. Each speaker will be asked to be sure to present (a) science questions, (b) key instruments and (c) locations and timing

9:15-10:30 Ongoing Project Focus

- GRUAN **Holger Vömel** (Remotely)
- NOAA **Dale Hurst**
- Ticosonde **Henry Selkirk**
- SHADOZ **Anne Thompson**
- SOWER **Fumio Hasebe**

10:30-11:00 Break

11:00-12:20 Campaign Focus Focus

- ATTREX **Eric Jensen**
- BATTREX **Gary Morris/ Joan Alexander**
- CAST-Aircraft **Neil Harris** (10 min)
- CAST-Sonde **Geraint Vaughan** (10 min)
- CONTRAST **Laura Pan**
- AerOClim **Markus Rex**

12:20 Adjourn formal session

Afternoon: Free for most participants.

For students: prepare synthesis presentations for Thursday in 3 small groups.

More information to be presented at the workshop.

THURSDAY: TTL measurements and modeling mapped to questions

Bus leaves hotel at 8:30

9:00-12.30: Current TTL science topics. (3 hours of short talks, plus 0.5 hour break)

List of Talks:

9:00-9:20 **Thomas Birner**: Quantifying the deep convective temperature signal within the tropical tropopause layer (TTL)

9:20-9:40 **Noriyuki Nishi**: *Cloud-top height dataset by geostationary satellite split window measurements trained with CLOUDSAT data*

9:40-10:00 **Masahiko Hayashi**: *Volatility and composition of TTL aerosols by balloon-borne in-situ observation*

10:00-10:30 Break

10:30-10:50 **Nawo Eguchi**, Kodera & Nasuno: *Impact of abrupt stratospheric dynamical change on Tropical Tropopause Layer*

10:50-11:10 **Kensaku Shimizu**: *Development of new Hydrometer Video Sonde (HYVIS) system for ice cloud observation in TTL region*

11:10-11:30 **Jianchun Bian**: *In situ water vapor and ozone measurements in Lhasa and Kunming during the Asian summer monsoon*

11:30-11:50 **Karen Rosenlof**: *The NOAA H₂O and O₃ data base*

11:50 -12:10 **Shinya Ogino**: *Ozone variations over the Northern subtropical region revealed by ozonesonde observations in Hanoi*

12:10-12:30 **Laura Pan**: *Identification of TTL boundaries using the ozone-water vapor relationship*

12:30-1:30 LUNCH

1:30-2:30 Summary of science questions from Monday-Wednesday - Talks led by student groups. 20 min per group on science topics.

2:30-3:00: Discussion of science questions

3:00-3:30 Break

3:30-4:30 Campaign Logistics mapping presentation by students. Discussion

4:30-5:30 - Plans for coordinated observations.

FRIDAY: Coordination and planning. Action items and future work

Bus leaves hotel at 8:30

9:00-10:30 Discussion of synergies and where we can work together (led by Organizers)

10:30-11:00 Break

11:00-11:30 Discussion of observations/Models and gaps – Discussion – What’s missing in current plans? Do campaign proposals address the missing elements?

11:30-12:00 Review science questions, and how to use coordinated observations

12:00-12:30 Action Items : common activities, critical planning needed, etc.

12:30 End workshop

PM: Organizing committee drafts white paper.