



# TORERO DATA MANAGEMENT UPDATE



**Steve Williams, Linda Echo-Hawk,  
and Janine Aquino**

**NCAR Earth Observing Laboratory (EOL)  
Computing, Data, and Software Facility (CDS)  
Boulder, Colorado**

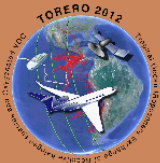
**TORERO Data Workshop  
CIRES, Boulder, CO  
23-25 July 2012**



EOL support sponsored by



# TORERO Data Management Web Site at NCAR/EOL



## TROPICAL OCEAN TROPOSPHERE EXCHANGE OF REACTIVE HALOGEN SPECIES AND OXYGENATED VOC (TORERO)

### What's New?

**TORERO Data Workshop, 23-25 July 2012, Tentative Agenda** - revised 20 July 2012

**AGU Session A075: Tropospheric Chemistry and Tropical Oceans**

AGU Fall Meeting, San Francisco, 3-7 December 2012 (Abstracts due 8 August 2012)

| Project Description   | Data Access  |
|---|--|
| <p><b>Scientific Objective</b></p> <p>The scientific objective of the TORERO project was to study the release, transport and fate of reactive halogen gases and oxidized VOCs, and their effect on the atmospheric oxidation capacity in the Eastern Tropical Pacific Ocean during the season of high biological ocean productivity. The project timeframe was coincident with a proposed complementary research vessel project in the same area, however TORERO science was not dependent on concurrent ship operations.</p> <p>The project utilized the NSF/GV aircraft to fly at several altitudes collecting remote sensing and in-situ data. The GV was based in San José, Costa Rica and deployed to approximately 105°W longitude. An early campaign, forward deployment to Antofagasta in central Chile to study the Southern Ocean during three flights also took place before ferrying to San José for the remaining 4 weeks of the deployment.</p>  <p>TORERO utilized the GV capabilities very well both in terms of the wide altitude envelope and long operating range that were required to reach the project's objectives. Some compromises had to be made to accommodate the desired payload, and payload support during forward deployments was limited.</p> | <p><b>TORERO Data Archive</b> (<i>under development</i>)<br/>Draft Data Policy<br/>Dataset Documentation Guidelines<br/>Data Submission Instructions<br/>TORERO Field Catalog</p>                |
|   | <p><b>Publications</b></p>  <p>TORERO Publications</p>  |
|   | <p><b>Meetings and Presentations</b></p> <p>Meetings and Presentations<br/>AGU Session A075: Tropospheric Chemistry and Tropical Oceans</p>  |
|   | <p><b>Documents</b></p> <p>TORERO Documents<br/>Aircraft Documentation<br/>TORERO Deployment Information</p>  |
| <p><b>Contact Information</b></p> <p>Principal Investigator:</p> <p>Rainer Volkamer, Univ. of Colorado<br/>Rainer.Volkamer AT colorado.edu</p> <p>EOL Coordination:</p> <p>José Meitin, Field Project Services<br/>meitin AT ucar.edu</p> <p>Pavel Romashkin, Research Aviation Facility<br/>pavel AT ucar.edu</p>  |  |
|   | <p><b>Mailing Lists</b></p> <p>TORERO Mailing List</p>   |
|   | <p><b>Media and Outreach</b></p>   |

- Project Description
- Data Access & Field Catalog
- Publications
- Documentation
- Meetings and Presentations
- Mailing Lists
- Education and Outreach
- Related Web Pages
- PI and Contact Information

<http://www.eol.ucar.edu/projects/torero/>

# TORERO Field Catalog



- Catalog Home
- Reports
- Operational Products
- Model/Forecast Products
- Research Products
- Missions
- Tools & Links
- Data Access
- Help ?

Boulder: Mon, July 23, 12:08 PM UTC: Mon, July 23, 19:08 Z San Jose, Costa Rica: Mon, July 23, 1:08 PM Antofagasta, Chile: Mon, July 23, 4:08 PM

- Daily Reports
- Operational Products
- Model Products
- Research Products
- Mission Summary Table
- Catalog Earth GIS Tool

**Latest Reports:**

- GV Status
- Weather Discussion

**Latest Products:**

IRC Chat instant access

Help Documentation

*need passwd? : catalog at eol.ucar.edu*

Catalog Earth Interface

Mission Coordinator Display

Multi panel display Interface

**Latest Satellite Imagery**

**Additional Imagery:**

TORERO Observations Period  
18 January to 28 February 2012

**General Information:**

- TORERO Web Site
- Daily Work Schedule
- Field Catalog low-bandwidth interface

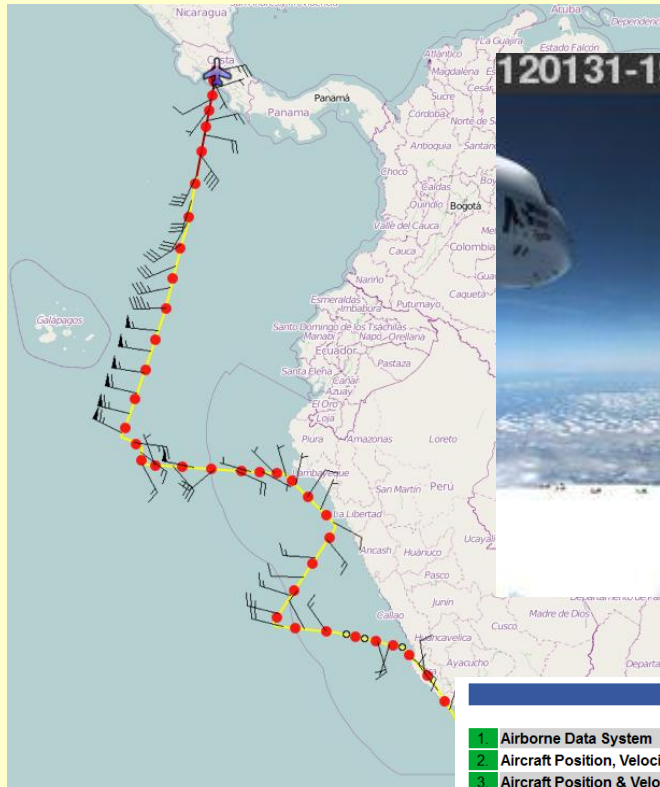
Comments ?

No public release of any product in this field catalog (distributed outside the TORERO community, for publications, commercial and media use, etc.) is allowed without the permission of the TORERO investigators.

NCEP GFS Forecast Products

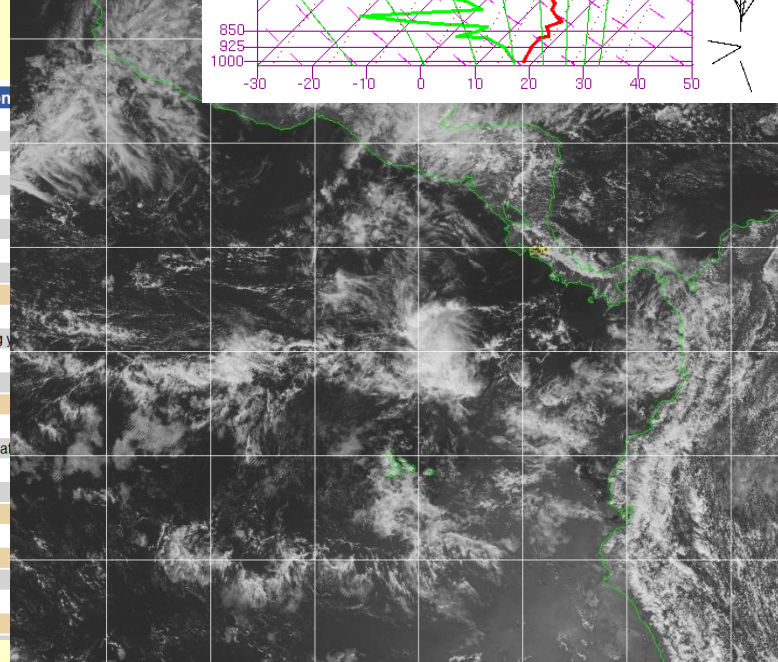
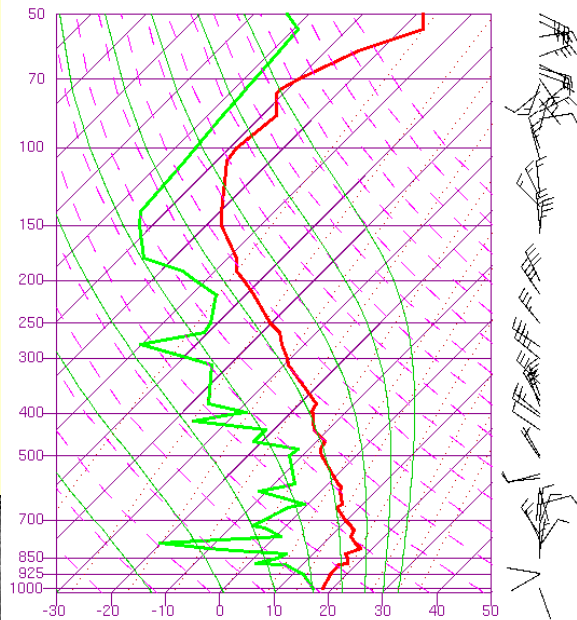
| Forecast Times(UTC)   | 19 Jan 2012 |       |       |       | 20 Jan 2012 |       |       |       | 21 Jan 2012 |       |       |       | 22 Jan 2012 |       |       |       | 23 Jan 2012 |       |       |       | 24 Jan 2012 |       |    |    |  |   |   |
|---|-------------|-------|-------|-------|-------------|-------|-------|-------|-------------|-------|-------|-------|-------------|-------|-------|-------|-------------|-------|-------|-------|-------------|-------|----|----|--|---|---|
|   | 00          | 06    | 12    | 18    | 00          | 06    | 12    | 18    | 00          | 06    | 12    | 18    | 00          | 06    | 12    | 18    | 00          | 06    | 12    | 18    | 00          | 06    | 12 | 18 |  |   |   |
| <b>gfs_mmm_halfdegree - Analysis and Forecast from 2012/01/19 00:00 UTC</b> |             |       |       |       |             |       |       |       |             |       |       |       |             |       |       |       |             |       |       |       |             |       |    |    |  |   |   |
| 200mb_streamln  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| 300mb_winds   | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| 500mb_height  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| 700mb_height  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| 850mb_height  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| cape  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| cirrus  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| dewpoint  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| grid_subgrid_rain   | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| precip  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| sfc_windspeed   | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| surface_temp  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| tropopause  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 072hr       | 078hr | 084hr | 090hr | 096hr       | 102hr | 108hr | 114hr | 120hr       |       |    |    |  | ☺ |   |
| <b>gfs_mmm_halfdegree - Analysis and Forecast from 2012/01/19 06:00 UTC</b> |             |       |       |       |             |       |       |       |             |       |       |       |             |       |       |       |             |       |       |       |             |       |    |    |  |   |   |
| 200mb_streamln  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 066hr | 066hr       | 072hr | 078hr | 084hr | 090hr       | 096hr | 102hr | 108hr | 114hr       | 120hr |    |    |  |   | ☺ |
| 300mb_winds   | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 060hr | 066hr       | 072hr | 078hr | 084hr | 090hr       | 096hr | 102hr | 108hr | 114hr       | 120hr |    |    |  |   | ☺ |
| 500mb_height  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 060hr | 066hr       | 072hr | 078hr | 084hr | 090hr       | 096hr | 102hr | 108hr | 114hr       | 120hr |    |    |  |   | ☺ |
| 700mb_height  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 060hr | 066hr       | 072hr | 078hr | 084hr | 090hr       | 096hr | 102hr | 108hr | 114hr       | 120hr |    |    |  |   | ☺ |
| 850mb_height  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 060hr | 066hr       | 072hr | 078hr | 084hr | 090hr       | 096hr | 102hr | 108hr | 114hr       | 120hr |    |    |  |   | ☺ |
| cape  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 060hr | 066hr       | 072hr | 078hr | 084hr | 090hr       | 096hr | 102hr | 108hr | 114hr       | 120hr |    |    |  |   | ☺ |
| cirrus  | 000hr       | 006hr | 012hr | 018hr | 024hr       | 030hr | 036hr | 042hr | 048hr       | 054hr | 060hr | 060hr | 066hr       | 072hr | 078hr | 084hr | 090hr       | 096hr | 102hr | 108hr | 114hr       | 120hr |    |    |  |   | ☺ |

# TORERO Field Catalog – Sample products



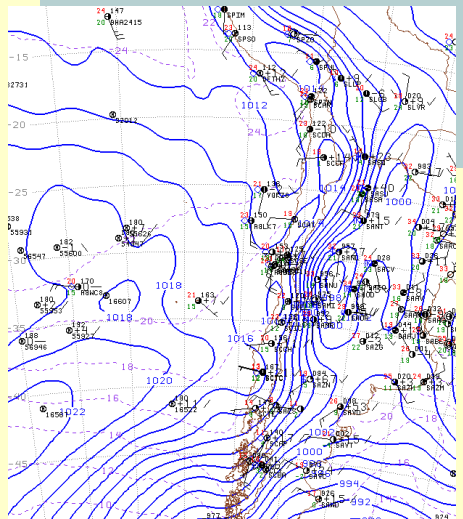
120131-192958

120131/1200 85442 SCFA SLAT: -23 SLON: -70 SELV: 137  
Antofagasta\_Chile



## RAF-Supplied Instrumentation

|                                |  |                                      |
|--------------------------------|--|--------------------------------------|
| 1                              | Airborne Data System                           | Comment:                             |
| 2                              | Aircraft Position, Velocity and Attitude (IRS) | Comment:                             |
| 3                              | Aircraft Position & Velocity ( $\Delta$ gps)   | Comment:                             |
| 4                              | Static Pressures                               | Comment:                             |
| 5                              | Dynamic Pressures                              | Comment:                             |
| 6                              | Temperatures                                   | Comment:                             |
| 7                              | Flow Angle Sensors, Radome                     | Comment:                             |
| Dew Point and Humidity Sensors |  |                                      |
| 8                              | Dew Point                                      | Comment: DPR very noisy              |
| 9                              | VCESEL Hygrometer                              | Comment: Intensity up after cleaning |
| 10                             | PMS Liquid Water Sensor (King) (PLWCC)         | Comment:                             |
| 11                             | Raw Icing-Rate Indicator (RICE)                | Comment:                             |
| Wing Stores                    |  |                                      |
| 12                             | UHSAS  | Comment:                             |
| 13                             | Cloud Droplet Probe (CDP)                      | Comment: Concentrations possibly at  |
| 14                             | Microwave Temp Profiler (MTP)                  | Comment:                             |
| 15                             | 2D-C Particle Imager (25 $\mu$ )               | Comment:                             |
| Aerosols                       |  |                                      |
| 16                             | Water CN Counters                              | Comment:                             |
| Photography                    |  |                                      |
| 17                             | Forward camera                                 | Comment: Restarted, ok afterwards    |
| 18                             | Side cameras                                   | Comment: Restarted, ok afterwards    |
| HAIS Instruments               |  |                                      |



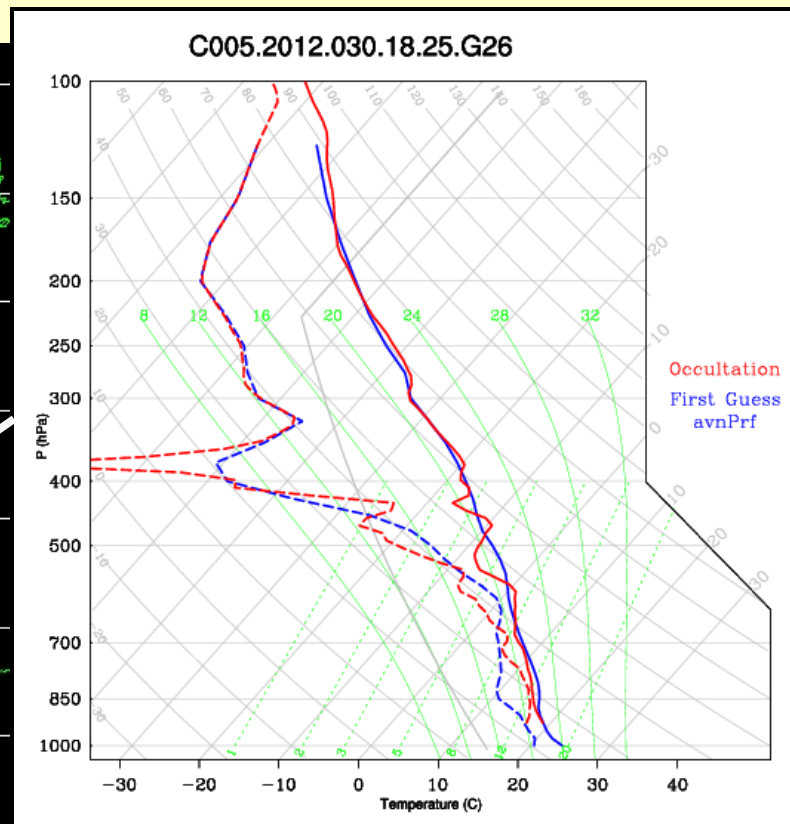
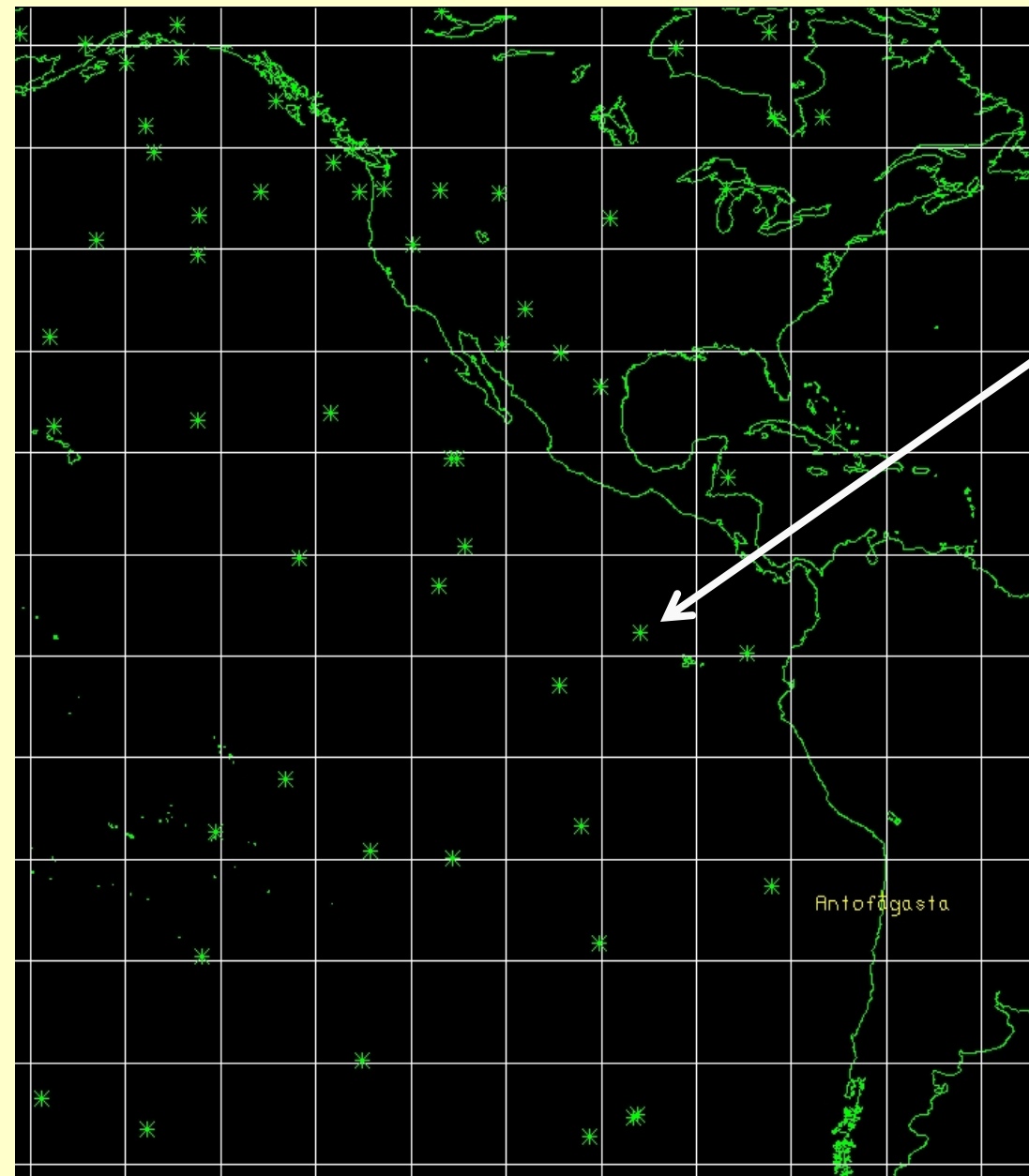


|                              |                         |                                      |   |                                   |                          |                                   |                             |                        |
|------------------------------|-------------------------|--------------------------------------|---|-----------------------------------|--------------------------|-----------------------------------|-----------------------------|------------------------|
| <a href="#">Catalog Home</a> | <a href="#">Reports</a> | <a href="#">Operational Products</a> | <a href="#">Model/Forecast Products</a> | <a href="#">Research Products</a> | <a href="#">Missions</a> | <a href="#">Tools &amp; Links</a> | <a href="#">Data Access</a> | <a href="#">Help ?</a> |
|------------------------------|-------------------------|--------------------------------------|---|-----------------------------------|--------------------------|-----------------------------------|-----------------------------|------------------------|

## NCAR GV Aircraft Flights

| Date            | Flight ID | Flight Track   | Animations   | Plots                 | Camera Summary          | Catalog Products   | Flight Summary                                 | Mission Description  |
|-----------------|-----------|--|--|-----------------------|-------------------------|--|--|--|
| 18 January 2012 | FF01      | <a href="#">kml</a>  | <a href="#">IR</a><br><a href="#">VIS</a>  |                       |                         | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> |  |  |
| 19 January 2012 | RF01      | <a href="#">kml</a><br><a href="#">png</a>   | <a href="#">IR Chile</a><br><a href="#">IR Galapagos</a><br><a href="#">VIS Chile</a><br><a href="#">VIS Galapagos</a> | <a href="#">Plots</a> | <a href="#">Summary</a> | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> | <a href="#">Ops</a><br><a href="#">Summary</a> | Peru upwelling, horizontal gradient sampling, vertical profiles<br>Repeat Module 1     |
| 21 January 2012 | RF02      | <a href="#">kml</a><br><a href="#">png</a>   | <a href="#">IR Chile</a><br><a href="#">VIS Chile</a>  | <a href="#">Plots</a> |                         | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> | <a href="#">Ops</a><br><a href="#">Summary</a> | Chilean Upwelling - Stratospheric Intrusion - Biomass burning from Africa<br>Module 2b |
| 24 January 2012 | RF03      | <a href="#">kml</a><br><a href="#">png</a><br><a href="#">HakuhoMaru kml</a><br><a href="#">Kaimimoana kml</a> | <a href="#">IR Chile</a><br><a href="#">VIS Chile</a>  | <a href="#">Plots</a> |                         | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> |  | Remote Open Ocean - Stratospheric Air - Subtropical Jet - Low approach SCFA            |
| 27 January 2012 | RF04      | <a href="#">kml</a><br><a href="#">png</a><br><a href="#">HakuhoMaru kml</a><br><a href="#">Kaimimoana kml</a> | <a href="#">IR Chile</a><br><a href="#">VIS Chile</a>  | <a href="#">Plots</a> |                         | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> |  | Chilean upwelling - Deep convective outflow - Coastal gradients near SCFA              |
| 29 January 2012 | RF05      | <a href="#">kml</a><br><a href="#">png</a><br><a href="#">Kaimimoana kml</a>                                   | <a href="#">IR Chile</a><br><a href="#">VIS Chile</a>  | <a href="#">Plots</a> |                         | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> |  | Oligotrophic ocean – Tropopause – Cirrus sampling - Coastal gradients                  |
| 31 January 2012 | RF06      | <a href="#">kml</a><br><a href="#">png</a><br><a href="#">Kaimimoana kml</a>                                   | <a href="#">IR Chile</a><br><a href="#">IR Galapagos</a><br><a href="#">VIS Chile</a><br><a href="#">VIS Galapagos</a> | <a href="#">Plots</a> |                         | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> |  | Cirrus sampling – Peru upwelling – RV Hakuho Maru – Tropical deep convection           |
| 3 February 2012 | RF07      | <a href="#">kml</a><br><a href="#">png</a><br><a href="#">Kaimimoana kml</a>                                   | <a href="#">IR Galapagos</a><br><a href="#">VIS Galapagos</a>  | <a href="#">Plots</a> |                         | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> |  | Tropical deep convection – RV Hakuho Maru  |
| 4 February 2012 | RF08      | <a href="#">kml</a><br><a href="#">png</a><br><a href="#">Kaimimoana kml</a>                                   | <a href="#">IR Galapagos</a><br><a href="#">VIS Galapagos</a>  | <a href="#">Plots</a> |                         | <a href="#">Operational</a><br><a href="#">Model</a><br><a href="#">Research</a> |  | RV Hakuho Maru - Tropical deep convection  |

# TORERO Field Catalog – COSMIC Soundings



Antofagasta



# TORERO Field Catalog Statistics

- Reports/Summaries (Status, Mission, and Operations)  
**160 documents and 50 image files (0.12 MB)**
- Research Platform Products (Aircraft, Surface, Lidar, Upper Air)  
**3,690 product files (0.14 MB)**
- Operational Products (Satellite, Surface, Radar, Upper Air)  
**247,055 product files (123.5 GB)**
- Model Output Imagery (Analysis and Forecast Fields)  
**742,434 product files (29.0 GB)**
- Google Earth Products  
**17,719 product files (0.51 GB)**
- **TOTALS: 1,011,058 Files (153.28 GB)**



# TORERO GV Digital Camera Movies



## TORERO

TROPICAL OCEAN TROPOSPHERE EXCHANGE OF  
REACTIVE HALOGEN SPECIES AND OXYGENATED  
VOC

JANUARY 15 - FEBRUARY 26, 2012

NCAR/NSF GV (HIAPER)

### Digital Camera Movies

This page contains movies created from images taken by forward-, down-, left-, and right-looking cameras mounted on the NSF/NCAR G-V during TORERO. Movies are final and contain selected data parameters along the right. ([Read more...](#))

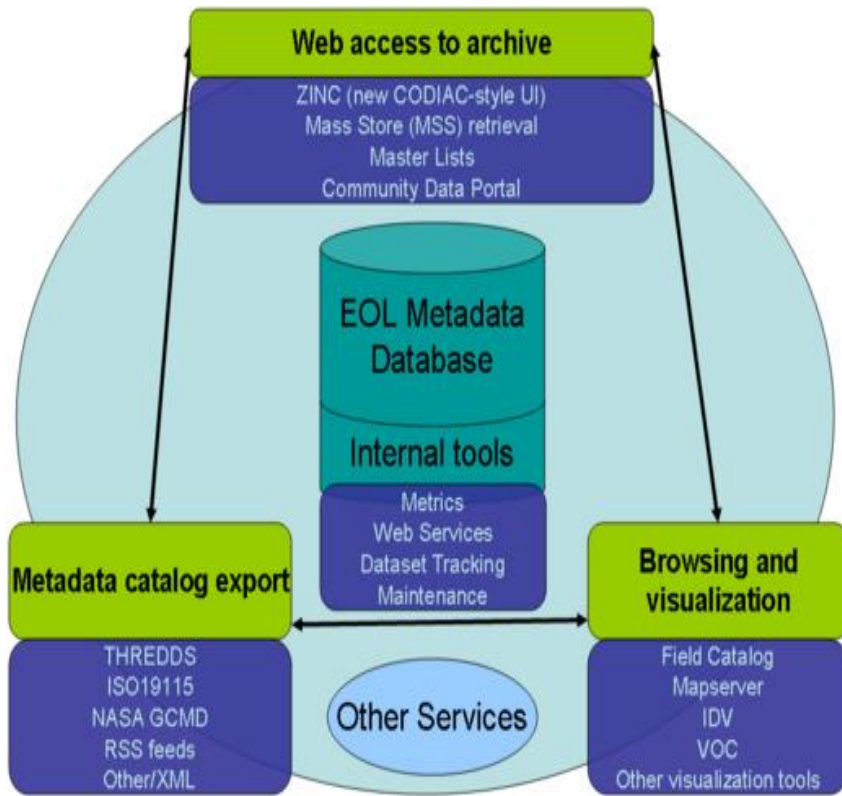
Movies can be ordered from the EOL TORERO data archive via [codiac](#)

| RF01  | RF02  | RF03   | RF04  | RF05  |
|---|---|--|---|---|
| 2012/01/19<br>13:52:00-21:40:00<br>  | 2012/01/21<br>12:43:30-21:05:30<br>  | 2012/01/24<br>12:35:30-20:32:45<br>  | 2012/01/27<br>12:49:00-21:12:30<br>  | 2012/01/29<br>14:18:00-22:07:00<br>  |
| RF06  | RF07  | RF08   | RF09  | RF10  |
| 2012/01/31<br>15:10:30-22:43:30<br> | 2012/02/03<br>15:00:00-22:23:30<br> | 2012/02/04<br>14:50:30-22:20:30<br> | 2012/02/07<br>14:23:00-22:49:00<br> | 2012/02/10<br>14:28:30-22:21:30<br> |
| RF11  | RF12  | RF13   | RF14  | RF15  |
| 2012/02/12<br>13:53:30-21:42:00   | 2012/02/14<br>14:02:00-22:22:30   | 2012/02/17<br>14:12:30-21:51:28  | 2012/02/19<br>14:31:00-23:00:30   | 2012/02/22<br>14:10:00-23:04:00   |



# EOL DATA MANAGEMENT

EOL Metadata Database and Cyberinfrastructure (EMDAC)



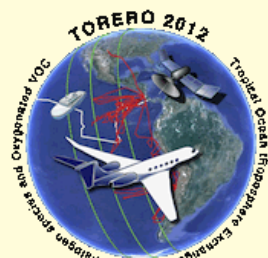
## EOL Data System (EMDAC)

*Primary means for all project scientists and researchers to browse and retrieve data from any EOL-supported projects*






### Features:

- Long-term field project data archival and distribution
- Interactive data browsing, subsetting, and format translation
- Web-based access
- Value-added datasets
- Data documentation

# TORERO Data Archive (Master List)



## TORERO Data Sets

| Data Set Name (Responsible Group/PIs shown in parentheses)                         | Date Posted       | Info  |
|--|-------------------|---|
| <b>Aircraft</b>  |                   |   |
| <b>Aircraft: NSF/NCAR GV</b>   |                   |   |
| <a href="#">GV Aircraft Table of Flights [NCAR-EOL]</a>                            | New<br>2012-07-17 |   |
| <a href="#">GV AMAX DOAS Report [Volkamer/CU]</a>                                  | New<br>2012-07-17 |   |
| GV AMAX-DOAS Data [Volkamer/CU]  |                   |   |
| GV Carbon Monoxide (CO) by VUV Fluorescence Data [Campos/NCAR-ACD]                 |                   |   |
| GV CN NMASS Aerosol Data [Rogers, Brock/NCAR-RAF,NOAA-ESRL]                        |                   |   |
| GV CO2 and CH4 (Picarro) Data [Campos/NCAR-ACD]                                    |                   |   |
| <a href="#">GV Digital Camera jpg Imagery (Downward-Looking) [Beaton/NCAR-RAF]</a> | 2012-04-17        |    |
| <a href="#">GV Digital Camera jpg Imagery (Forward-Looking) [Beaton/NCAR-RAF]</a>  | 2012-04-17        |  |
| <a href="#">GV Digital Camera jpg Imagery (Left-Looking) [Beaton/NCAR-RAF]</a>     | 2012-04-17        |  |
| <a href="#">GV Digital Camera jpg Imagery (Right-Looking) [Beaton/NCAR-RAF]</a>    | 2012-04-17        |  |
| <a href="#">GV Digital Camera Movies with data - final [NCAR-RAF]</a>              | New<br>2012-07-23 |  |

### DATA BY CATEGORY

- Aircraft
- Ancillary
- Chemistry
- Land Based
- Model
- Oceanography
- Photography
- Radar
- Satellite
- Ship Based
- Upper Air

[Back to TORERO](#)

Email comments & questions to [codiac@ucar.edu](mailto:codiac@ucar.edu)

[http://data.eol.ucar.edu/master\\_list/?project=TORERO](http://data.eol.ucar.edu/master_list/?project=TORERO)

# TORERO DATA SUBMISSION



## TORERO DATA SUBMISSION INSTRUCTIONS

The [TORERO home page](#) contains relevant links to project and data documentation, distributed data access, and other collaborating projects' data sets.

An initial master list of all TORERO international data sets (with links) has been compiled to provide easy access to all TORERO data sets (both operational and research). Data sets are grouped by platform and sorted by data type (i.e., aerosol, cloud properties, radar, satellite, etc.). This list will be updated frequently. It is available directly at [TORERO Master List](#).

If you collected data for TORERO, please review this list to verify that your data set(s) are properly named with the appropriate Principal Investigators (PIs) identified. Please e-mail any corrections, additions, or deletions directly to [Steve Williams](#). If you already have your data sets available on-line, please provide the web link or FTP access information. Once your data set (with metadata) is available, a link will be provided from the master list web page along with a submission date to track future data set upgrades or revisions (if needed).

Please submit your data set(s) (including accompanying metadata or documentation files) to the TORERO Long-term Data Archive at NCAR Earth Observing Laboratory. Data set (and metadata) submission guidelines are available by direct link at: [http://www.eol.ucar.edu/projects/torero/dm/data\\_documentation\\_guidelines.html](http://www.eol.ucar.edu/projects/torero/dm/data_documentation_guidelines.html).

To expedite matters, the EOL has established an anonymous FTP capability to accept your TORERO data set(s). The Internet address is:

**FTP:** ftp.eol.ucar.edu  
**Login:** anonymous (No password required.)  
**cd /pub/data/incoming/torero**

It is very important to **send an e-mail to [sfw at ucar.edu](mailto:sfw@ucar.edu) indicating that the data file(s) have been FTPed**, along with the file(s) names, data contact information, any data restrictions, and appropriate file documentation (i.e., data formats, descriptions, acknowledgments, and metadata). Documentation files may be e-mailed to [sfw at ucar.edu](mailto:sfw@ucar.edu) directly if preferred. **If password protection is required for these data, please indicate this at the time of submission.** You will receive a unique "user ID" and "password" that can be changed at any time upon request. For users without direct Internet access, or if your data set(s) are too large to FTP, you may send digital file(s) on magnetic or optical media (with documentation) by conventional mail to the EOL shipping address below.

Thank you very much for your assistance in providing final data to the TORERO archive. Feel free to contact me should you encounter any problems or have any questions.

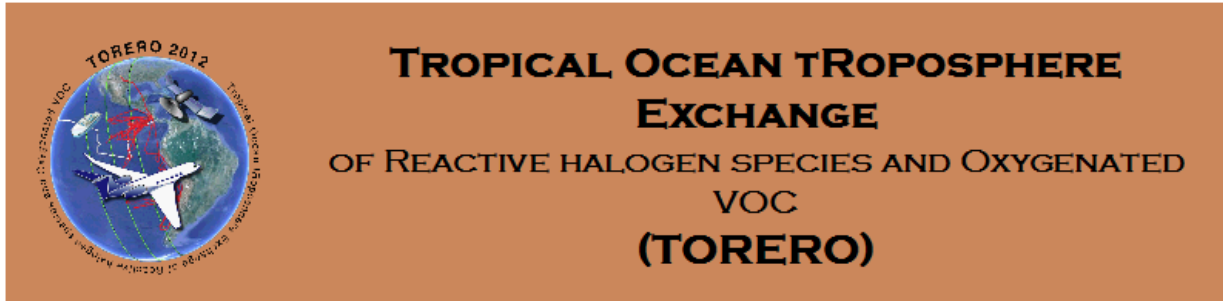
*Steve Williams*  
*TORERO Data Manager*

Steve Williams  
NCAR Earth Observing Laboratory (EOL)

**Telephone:** (303)497-8164  
**Facsimile:** (303)497-2044  
**Internet:** [sfw at ucar.edu](mailto:sfw@ucar.edu)



# TORERO PROJECT PUBLICATIONS LIBRARY



## Publication References

How to Submit Publication References to this List

[Publications](#)

[Conferences](#)

[Reports](#)

[Theses](#)

[Other Citation Links](#)

### Publications

[A-D](#)

[E-H](#)

[I-L](#)

[M-P](#)

[Q-T](#)

[U-Z](#)

[Back to Top](#)

### Conference Proceedings

[A-D](#)

[E-H](#)

[I-L](#)

[M-P](#)

[Q-T](#)

[U-Z](#)

[Back to Top](#)

### Reports

[A-D](#)

[E-H](#)

[I-L](#)

[M-P](#)

[Q-T](#)

[U-Z](#)

[Back to Top](#)

# VOCALS PROJECT PUBLICATIONS LIBRARY

## Publications

|                     |                     |                     |                     |                     |                     |                             |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------------|
| <a href="#">A-D</a> | <a href="#">E-H</a> | <a href="#">I-L</a> | <a href="#">M-P</a> | <a href="#">Q-T</a> | <a href="#">U-Z</a> | <a href="#">Back to Top</a> |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------------|

- Abel, S. J., and I. A. Boutle, 2012: An improved representation of the raindrop size distribution for single-moment microphysics schemes. *Q.J.R. Meteorol. Soc.* doi: 10.1002/qj.1949.
- Abel, S. J., D. N. Walters, and G. Allen, 2010: Evaluation of stratocumulus cloud prediction in the Met Office forecast model during VOCALS-REx. *Atmos. Chem. Phys.*, 10, 10541-10559, doi:10.5194/acp-10-10541-2010.
- Allen, G., H. Coe, A. Clarke, C. Bretherton, R. Wood, S. J. Abel, P. Barrett, P. Brown, R. George, S. Freitag, C. McNaughton, S. Howell, L. Shank, V. Kapustin, V. Brekhovskikh, L. Kleinman, Y.-N. Lee, S. Springston, T. Toniazzo, R. Krejci, J. Fochesatto, G. Shaw, P. Krecl, B. Brooks, G. McMeeking, K. N. Bower, P. I. Williams, J. Crosier, I. Crawford, P. Connolly, J. D. Allan, D. Covert, A. R. Bandy, L. M. Russell, J. Trembath, M. Bart, J. B. McQuaid, J. Wang, and D. Chand, 2011: South East Pacific atmospheric composition and variability sampled along 20°S during VOCALS-REx. *Atmos. Chem. Phys.*, 11, 5237-5262, doi:10.5194/acp-11-5237-2011.
- Allen, G., G. Vaughan, T. Toniazzo, H. Coe, P. Connolly, S. E. Yuter, C. D. Burleyson, P. Minnis, and J. K. Ayers, 2012: Gravity-wave-induced perturbations in marine stratocumulus. *Q.J.R. Meteorol. Soc.*, doi: 10.1002/qj.1952.
- Benedict, K. B., T. Lee, and J. L. Collett Jr., 2012: Cloud water composition over the southeastern Pacific Ocean during the VOCALS regional experiment. *Atmos. Environ.*, 46, 104-114, doi:10.1016/j.atmosenv.2011.10.029.
- Berner, A. H., C. S. Bretherton, and R. Wood, 2011: Large-eddy simulation of mesoscale dynamics and entrainment around a pocket of open cells observed in VOCALS RF06. *Atmos. Chem. Phys. Discuss.*, 11, 13317-13353, doi:10.5194/acpd-11-13317-2011.
- Boutle, I. A., and S. J. Abel, 2012: Microphysical controls on the stratocumulus topped boundary-layer structure during VOCALS-REx, *Atmos. Chem. Phys.*, 12, 2849-2863, doi:10.5194/acp-12-2849-2012.
- Brenguier, J.-L., F. Burnet, and O. Geoffroy, 2011: Cloud optical thickness and liquid water path – does the  $k$  coefficient vary with droplet concentration?, *Atmos. Chem. Phys.*, 11, 9771-9786, doi:10.5194/acp-11-9771-2011.
- Bretherton, C. S., R. Wood, R. C. George, D. Leon, G. Allen, and X. Zheng, 2010: Southeast Pacific stratocumulus clouds, precipitation and boundary layer structure sampled along 20°S during VOCALS-REx. *Atmos. Chem. Phys.*, 10, 10639-10654, doi:10.5194/acp-10-10639-2010.
- Caldwell, P., and C. S. Bretherton, 2009: Large Eddy Simulation of the Diurnal Cycle in Southeast Pacific Stratocumulus. *J. Atmos. Sci.*, 66, 432-449, doi: 10.1175/2008JAS2785.1.
- Caldwell, P., and C. S. Bretherton, 2009: Response of a Subtropical Stratocumulus-Capped Mixed Layer to Climate and Aerosol Changes. *J. Climate*, 22, 20-38.
- Caldwell, P., C. S. Bretherton, and R. Wood, 2005: Mixed-Layer Budget Analysis of the Diurnal Cycle of Entrainment in Southeast Pacific Stratocumulus. *J. Atmos. Sci.*, 62, 3775-3791, doi: 10.1175/JAS3561.1.
- Chaigneau, A., M. Le Texier, G. Eldin, C. Grados, and Ó. Pizarro, 2011: Vertical structure of mesoscale eddies in the eastern South Pacific ocean: a composite analysis from altimetry and Argo profiling floats, *J. Geophys. Res.*, doi:10.1029/2011JC007134, in press.



# TROPICAL OCEAN TROPOSPHERE EXCHANGE OF REACTIVE HALOGEN SPECIES AND OXYGENATED VOC (TORERO)

## *TORERO Planning Workshop*

### Agenda

October 31 - November 1, 2011  
FL1, Room 2198, EOL Atrium

#### Day 1 – Monday, October 31

- 8:00-8:40 *REGISTRATION & CONTINENTAL BREAKFAST*
- 8:40-9:00 **Welcome & Introductions**  
Rainer Volkamer, CU Boulder - TORERO Science Lead  
Al Cooper, NCAR/RAF - NSF/NCAR GV Chief Scientist  
Pavel Romashkin, NCAR/RAF - Project Manager  
Brigitte Baeuerle, NCAR/EOL - Logistics support
- 9:00-9:40 **TORERO – Science Objectives, Platforms and Activities**  
Rainer Volkamer, CU Boulder
- 9:40 **SESSION ONE – TORERO BOUNDARY LAYER OBSERVATIONS**  
CHAIR: Chris Fairall, NOAA/ESRL/PSD  
CO-CHAIR: Byron Blomquist, UHawaii
- 9:40-10:00 **Cruise KA-12-01 aboard RV Ka'imimoana**  
Sean Coburn and Rainer Volkamer, CU Boulder
- 10:00-10:20 **Very short lived halocarbons (VSLH) in air and seawater**  
Lucy Carpenter, University of York, UK
- 10:20-10:40 **Air-Sea Measurements from Ships**  
Chris Fairall, NOAA/ESRL/PSD
- 10:40-11:00 **CO<sub>2</sub> Flux Measurements**

©2007 EPM2 Inc.



*"I'M SORRY, BUT IT SAYS HERE THAT YOU  
DIDN'T MEET YOUR PROJECT DELIVERABLES."*

# Thank you! Questions?

<http://www.eol.ucar.edu/projects/torero>

**Steve Williams (sfw@ucar.edu)**

**Linda Echo-Hawk (echohawk@ucar.edu)**