

## **IHOP\_2002 Newsletter Volume III**

The purpose of the IHOP\_2002 Newsletter is to provide the IHOP community with information on IHOP announcements, meetings, article submissions, instrument/data findings, etc. The newsletter will be produced on a quarterly basis.

If you would like to contribute, please send your submissions to [tignor@ucar.edu](mailto:tignor@ucar.edu). Figures and images are always appreciated



### **Upcoming Events:**

**IHOP\_2002 Spring Science Workshop  
14-18 June 2004  
Toulouse, France**

**IHOP\_2002 Data Assimilation Workshop  
TBD**

### **Refractivity Announcement by Crystalyn Pettet, NCAR**

The IHOP refractivity dataset is available in sweep file format on the ATD Mass Store at [http://www.atd.ucar.edu/rdp/mss\\_retrieval/index.html](http://www.atd.ucar.edu/rdp/mss_retrieval/index.html)

Radar refractivity images of the entire project can be viewed at [http://www.atd.ucar.edu/rtf/projects/ihop\\_2002/spol/summary/N\\_quicklook/img\\_viewer.html](http://www.atd.ucar.edu/rtf/projects/ihop_2002/spol/summary/N_quicklook/img_viewer.html) (courtesy of Frédéric Fabry's image production software and Bob Rilling's Web-based image viewer software).

For a general overview of the radar refractivity algorithm and IHOP-specific information on data processing, interpretation and quality, please see [http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPrefractivityManual.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPrefractivityManual.pdf)

### **IHOP Water Vapor Intercomparison Workshop 2-3 October 2003**

The first IHOP Water Vapor Intercomparison Workshop was held 2-3 October, in Boulder, CO.

Presentations from the workshop can be viewed at [http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPwsOct03/presentations.html](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPwsOct03/presentations.html)

Volker Wulfmeyer prepared a report of the proceedings. The workshop summary can be viewed in its entirety at [http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPwsOct03/WulfmeyerWrkshpReport.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPwsOct03/WulfmeyerWrkshpReport.pdf)

## The 6<sup>th</sup> International Symposium on Tropospheric Profiling (ISTP) by David Parsons, NCAR

### IHOP Presentations from the 6<sup>th</sup> ISTP:

An Overview of the International H<sub>2</sub>O Project (IHOP\_2002).

D. Parsons, T. Weckwerth

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPtropoPresent/parsons.ppt](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPtropoPresent/parsons.ppt)

The life cycle of a bore event over the US Southern Great Plains during IHOP\_2002.

C. Flamant, S. Koch, T. Weckwerth, J. Wilson, D. Parsons, B. Demoz, B. Gentry, D. Whiteman, G. Schwemmer, F. Fabry, W. Feltz, M. Pagowski, P. Di Girolamo

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPtropoPresent/flamant.ppt](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPtropoPresent/flamant.ppt)

Structure and dynamics of a dual bore event during IHOP as revealed by remote sensing and numerical simulation.

S. Koch, M. Pagowski, F. Fabry, W. Feltz, G. Schwemmer, B. Geerts, B. Demoz, B. Gentry, D. Parsons, T. Weckwerth, J. Wilson

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPtropoPresent/koch.ppt](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPtropoPresent/koch.ppt)

NASA/GSFC Scanning Raman Lidar measurements of water vapor and clouds during the International H<sub>2</sub>O Project (IHOP) field campaign.

D. Whiteman, B. Demoz, P. Di Girolamo, Z. Wang, K. Evans, R. Lin

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPtropoPresent/whiteman.ppt](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPtropoPresent/whiteman.ppt)

Airborne remote measurements of water vapor, relative humidity, aerosol, and cloud distributions during the IHOP field experiment.

E. Browell, S. Ismail, R. A. Ferrare, S. A. Kooi, A. Notari, C. F. Butler, V. G. Brackett, H. E. Revercomb, P. Antonelli

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPtropoPresent/browell.ppt](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPtropoPresent/browell.ppt)

Moisture, wind, and boundary layer evolution during a dryline in IHOP 2002: 22 May 2002B.

Demoz, D. Miller, K. Evans, D. Whiteman, P. Di Girolamo, G. Schwemmer, B. Gentry, D. Starr, Z. Wang

[http://istp2003.tropos.de:8085/epresent/wednesday/S6\\_IHOP/6.6-o\\_demoz/](http://istp2003.tropos.de:8085/epresent/wednesday/S6_IHOP/6.6-o_demoz/)

Airborne measurement of horizontal wind and moisture transport using codeployed Doppler and DIAL lidars.

R. M. Hardesty, W. A. Brewer, S. P. Sandberg, C. J. Senff, B. J. McCarty, A. M. Weickmann, G. Ehret, A. Fix, G. Poberaj, M. Wirth, C. Kiemle

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPtropoPresent/hardesty.ppt](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPtropoPresent/hardesty.ppt)

High resolution airborne DIAL measurements of water vapour and humidity fluxes during IHOP.

C. Kiemle, A. Fix, H. Flentje, G. Poberaj, M. Wirth, G. Ehret, R. M. Hardesty, W. A. Brewer, S. P. Sandberg

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPtropoPresent/hardesty.ppt](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPtropoPresent/hardesty.ppt)

Raman lidar measurements of atmospheric temperature during the International H<sub>2</sub>O Project.

P. Di Girolamo, R. Marchese, D. N. Whiteman, B. B. Demoz

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOPtropoPresent/girolamo.ppt](http://www.atd.ucar.edu/dir_off/projects/2002/IHOPtropoPresent/girolamo.ppt)

## IHOP Paper & Poster Abstracts from the 31<sup>st</sup> AMS Radar Conference

A Multi-Doppler Analysis of Convective Initiation on 10 June 2002 During IHOP\_2002.

Nettie R. Arnott, The Pennsylvania State University, University Park, PA; and Y. P. Richardson and J. Wurman

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/arnott.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/arnott.pdf)

Observed Convergence of Water Vapor Prior to and During the June 12, 2002 Northern Oklahoma Storm Using the Global Positioning System

John J. Braun, UCAR, Boulder, CO; and Y. Xie

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/braun.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/braun.pdf)

The Kinematic and Thermodynamic Effects of Vortices Within a Dryline.

Michael S. Buban, CIMMS/Univ. of Oklahoma, Norman, OK; and C. L. Ziegler and E. N. Rasmussen

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/buban.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/buban.pdf)

Observations of the Finescale Structure of 11 June Dryline During IHOP\_2002.

Huaqing Cai, NCAR, Boulder, CO; and W.-C. Lee

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/cai.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/cai.pdf)

Highlights of Refractivity Observations During IHOP.

Frédéric Fabry, McGill University, Montreal, QC, Canada; and S. Park

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/fabry.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/fabry.pdf)

Fine-Scale Vertical Structure of a Cold Front as Revealed by Airborne 95 GHz Radar.

Bart Geerts, University of Wyoming, Laramie, WY; and D. Leon

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/geerts.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/geerts.pdf)

Vertical Velocity and Buoyancy Characteristics of Echo Plumes Detected by an Airborne MM-Wave Radar in the Convective Boundary Layer.

Bart Geerts, University of Wyoming, Laramie, WY; and Q. Miao

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/geerts2.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/geerts2.pdf)

An Eye-Safety Radar for Lidar Operations.

Grant R. Gray, UCAR, Boulder, CO; and F. Pratte

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/gray.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/gray.pdf)

A Multiple-Doppler Radar Analysis of Intersecting Mesoscale Boundaries During IHOP.

Christina Hannon, Penn State University, University Park, PA; and P. Markowski

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/hannon.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/hannon.pdf)

MIPS and Radar Observations of Boundaries During IHOP\_2002.

Haldun Karan, University of Alabama, Huntsville, AL; and K. R. Knupp

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/karan.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/karan.pdf)

Mobile Doppler Radar Observations of a Front During IHOP.

Paul Markowski, Penn State University, University Park, PA

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/markowski.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/markowski.pdf)

Initiation of Deep Convection on May 24 and June 19, 2002 During IHOP.

Hanne V. Murphey, University of California, Los Angeles, CA; and R. M. Wakimoto, E. V. Browell, D. E. Kingsmill, and C. N. Flamant

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/murphey.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/murphey.pdf)

## IHOP Paper & Poster Abstracts from 31<sup>st</sup> AMS Radar Conference

The Characteristics of Bores and Gravity Waves Associated with Nocturnal Convection During IHOP\_2002.

David B. Parsons, NCAR/ATD, Boulder, CO; and C. R. Pettet and T. M. Weckwerth

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/parsons.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/parsons.pdf)

An Evaluation of the Radar Refractivity Retrieval During IHOP\_2002.

Crystalyne R. Pettet, NCAR, Boulder, CO; and T. M. Weckwerth, F. Fabry, and J. W. Wilson

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/pettet.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/pettet.pdf)

Airborne Proximity Radar for Laser Eye Safety: Design and Development.

Frank Pratte, UCAR/NCAR, Boulder, CO; and G. R. Gray and J. Fox

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/pratte.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/pratte.pdf)

Relationship of Cumulus Locations with Kinematic Features Derived from Multi-Doppler Analysis on 24 May 2002.

Erik N. Rasmussen, CIMMS/Univ. of Oklahoma, Norman, OK; and C. L. Ziegler and Y. P. Richardson

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/rasmussen.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/rasmussen.pdf)

Multi-Doppler Analysis of Convective Initiation on 19 June 2002 During IHOP\_2002.

Yvette P. Richardson, Penn State University, University Park, PA; and J. M. Wurman and C. Hartman

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/richardson.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/richardson.pdf)

Mantle Echoes Associated with Deep Convection During IHOP: Observations and Numerical Simulations.

Roger M. Wakimoto, UCLA, Los Angeles, CA; and H. V. Murphey, R. G. Fovell, and W.-C. Lee

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/wakimoto.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/wakimoto.pdf)

Integrated Observations of Water Vapor During IHOP\_2002.

Tammy M. Weckwerth, NCAR, Boulder, CO; and D. B. Parsons

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/weckwerth.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/weckwerth.pdf)

Fine-Scale Radar Observations of a Dryline During the International H2O Project.

Christopher C. Weiss, University of Oklahoma, Norman, OK; and H. B. Bluestein and A. L. Pazmany

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/weiss.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/weiss.pdf)

Predictability of Convective Storm Initiation.

James W. Wilson, NCAR, Boulder, CO; and R. Roberts

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/wilson.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/wilson.pdf)

Thunderstorm Nowcasting: Past, Present, and Future.

James W. Wilson, NCAR, Boulder, CO

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/wilson2.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/wilson2.pdf)

Relation of Radar-Derived Kinematic Features and In-Situ Moisture to Cumulus Development on 24 May 2002 During IHOP.

Conrad L. Ziegler, NOAA/NSSL, Norman, OK; and E. N. Rasmussen, Y. P. Richardson, R. M. Rabin, and M. S. Buban

[http://www.atd.ucar.edu/dir\\_off/projects/2002/IHOP31stRadarAbstracts/ziegler.pdf](http://www.atd.ucar.edu/dir_off/projects/2002/IHOP31stRadarAbstracts/ziegler.pdf)