

Scientific Program

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Tuesday May 13

8:00 Registration (Pre-registration on Monday May 12 at night, followed by a "Get-together")

8:30 Opening Ceremony

9:30 Coffee Break

SESSION I.1 : RADAR SCATTERING PROCESSES IN THE NEUTRAL ATMOSPHERE

Conveners: H. Luce and A. Muschinski

Tuesday May 13

Chair: M. Petitdidier & H. Luce

10:30 I.1.1	<u>D. Fritts</u>	IMPLICATIONS OF DIRECT NUMERICAL SIMULATIONS OF TURBULENCE GENERATION AND MORPHOLOGY FOR DYNAMICS AND RADAR BACKSCATTER	I
10:50 I.1.2	<u>F. Dalaudier</u> , M. Crochet and H. Luce	COMBINED ST RADAR/BALLOON OBSERVATIONS	I
11:10 I.1.3	<u>D. Hooper</u> , J. Arvelius and K. Stebel	STATIC STABILITY RETRIEVAL FROM MST RADAR RETURN SIGNAL POWER	
11:25 I.1.524	<u>D. Hooper</u> and E. Pavelin	TROPopause EROSION BY MOUNTAIN WAVE BREAKING	

12:30 Lunch at UDEP (Universidad de Piura) ¹

Chair: H. Luce & W. Singer

16:00 I.1.8	<u>A. McDonald</u>	IDENTIFICATION OF TURBULENCE USING VHF RADAR DATA	
16:15 I.1.11	H. Tong, V. Tellabati, R. Palmer et al.	OBSERVATIONS OF FINE-SCALE STRUCTURE IN THE BOUNDARY LAYER USING THE TURBULENT EDDY PROFILER	
16:30 I.1.12	B. Cheong, M. Hoffman, R. Palmer et al.	PULSE PAIR BEAMFORMING AND THE EFFECTS OF REFLECTIVITY FIELD VARIATIONS ON IMAGING RADARS	
16:45 I.1.9	<u>J. Röttger</u>	ABOUT ASPECT SENSITIVITY AND MULTIPLE LAYERING OF PMSE	

17:00 Coffee break

SESSION I.2 : D, E, AND F REGION COHERENT SCATTERING

Conveners: D. Hysell and R. Palmer

Tuesday May 13

Chair: D. Hysell & T. Ogawa

17:20 I.2.1	<u>J. Chau</u> , D. Hysell and M. Milla	RECENT OBSERVATIONS OF E REGION FIELD-ALIGNED IRREGULARITIES AT LOW LATITUDES	I
17:40 I.2.2	M. Yamamoto and <u>S. Fukao</u>	ROCKET/RADAR EXPERIMENT OF THE E-REGION IONOSPHERE: SEEK-2 (SPORADIC-E EXPERIMENT OVER KYUSHU - 2)	I
18:00 I.2.3	<u>S. Saito</u> , S. Fukao, R. Tsunoda et al.	RADAR OBSERVATIONS OF FIELD-ALIGNED PLASMA IRREGULARITIES IN THE SPORADIC E EXPERIMENT OVER KYUSHU 2 (SEEK-2)	
18:15 I.2.4	<u>G. Hussey</u> , C. Haldoupis, A. Bourdillon et al.	MID-LATITUDE E-REGION BULK MOTIONS INFERRED FROM COHERENT HF RADAR AND IONOSONDE MEASUREMENTS	
18:30 I.2.5	<u>C. Haldoupis</u> , M. Kelley,	THE ROLE OF UNSTABLE SPORADIC-E LAYERS IN THE GENERATION	

- 18:45 I.2.6 G. Hussey et al. [OF MIDLATITUDE SPREAD-F](#)
 J. Urbina, E. Kudeki and [VHF RADAR OBSERVATIONS OF MIDLATITUDE E-REGION](#)
 S. Franke [IRREGULARITIES AT CAMP SANTIAGO, PR](#)

Wednesday May 14**Chair: D. Hysell & C. Haldoupis**

- 08:00 I.2.7 E. Kudeki [150 KM. ECHOES](#) |
 08:20 I.2.522 F. Lu, D. Farley and W. [THE ASPECT SENSITIVITY OF RADAR ECHOES FROM THE](#)
 Swartz [EQUATORIAL ELECTROJET](#)
 08:35 I.2.9 J. Liu, C. Hsiao, S. [VERTICAL GROUP AND PHASE VELOCITIES OF IONOSPHERIC](#)
 Fukao et al. [WAVES DERIVED FROM THE MU RADAR AND ITS CO-LOCATED](#)
[IONOSONDE](#)
 08:50 I.2.10 C. Chen and C. Pan [THE BEHAVIOR OF IRREGULARITIES IN THE MID-LATITUDE ES](#)
[REGION OBSERVED WITH THE CHUNG-LI VHF RADAR](#)
 09:05 I.2.11 R. Choudhary, J. St.- [ON THE ORIGIN OF TWO TYPES OF QUASI-PERIODIC BACKSCATTER](#)
 Maurice, L. Kagan et al. [AS OBSERVED WITH THE GADANKI RADAR](#)
 09:20 I.2.12 D. Hysell, M. Larsen and [IN BEAM RADAR IMAGING OF IONOSPHERIC IRREGULARITIES](#)
 J. Chau
 09:35 I.2.13 Y. Chu and C. Wang [BEAM BROADENING EFFECT ON THE DOPPLER SPECTRUM OF THE](#)
[ECHOES FROM IONOSPHERIC IRREGULARITIES LOCALIZED IN](#)
[SPORADIC E REGION](#)
 09:50 I.2.14 F. Lind, J. Foster and P. [RADAR OBSERVATIONS OF E-REGION IRREGULARITIES AT](#) |
 Erickson [MILLSTONE HILL](#)

10:10 *Coffee break***Chair: R. Palmer & M. Sarango**

- 10:30 I.2.16 M. Rapp, F. Lübken and [ELECTRON DIFFUSION IN THE VICINITY OF CHARGED AEROSOL](#) |
 W. Singer [PARTICLES REVISITED: DO WE FINALLY UNDERSTAND PMSE?](#)
 10:50 I.2.519 P. Hoffmann, M. Rapp, [MULTIPLE LAYER PMSE STRUCTURES: STATISTICAL RESULTS FROM](#)
 R. Latteck et al. [EIGHT YEARS OF PMSE OBSERVATIONS AND POSSIBLE PHYSICAL](#)
 11:05 I.2.17 J. Chen, P. Hoffmann, [EXPLANATIONS OF THEIR OBSERVED PROPERTIES](#)
 M. Zecha et al. [ON THE RELATIONSHIP BETWEEN ASPECT SENSITIVITY AND](#)
 11:20 I.2.18 M. Sarango, R. [MULTIPLE SCATTERING CENTERS OF MESOSPHERE SUMMER](#)
 Woodman, L. Flores et [ECHOES: A CASE STUDY USING COHERENT RADAR IMAGING](#)
 al. [FURTHER OBSERVATIONS OF PMSE IN ANTARCTICA](#)
 11:35 I.2.19 T. Ogawa [ANTARCTIC AND ARCTIC PMSES OBSERVED WITH OBLIQUE](#)
[INCIDENCE HF RADARS - A BRIEF OVERVIEW](#)
 11:50 I.2.20 J. Röttger, K. Kubo and [EISCAT AND SOUSY SVALBARD RADAR OBSERVATIONS TO DEDUCE](#)
 S. Fukao [THE SCHMIDT NUMBER DURING PMSE EVENTS](#)
 12:05 I.2.21 H. Bahcivan and D. [PHASE DIFFUSION AND INTERPRETATION OF COHERENT](#)
 Hysell [SCATTERING](#)

12:30 *Lunch on your own*¹**SESSION I.3 : WINDS, WAVES AND TURBULENCE IN THE LOWER AND MIDDLE ATMOSPHERE AND THE LOWER THERMOSPHERE****Conveners: W. Hocking and M. Larsen****Wednesday May 14****Chair: W. Hocking & D. Fritts**

- 16:00 I.3.1 D. Holdsworth and J. [COMPARISONS OF FULL CORRELATION ANALYSIS \(FCA\) AND](#)
 Reid [IMAGING DOPPLER INTERFEROMETRY \(IDI\) WINDS USING THE](#)
[BUCKLAND PARK MF RADAR.](#)

16:15	I.3.2	<u>R. Doviak</u> , G. Zhang, S. Cohn et al.	PRECISION OF SPACED-ANTENNA WIND ESTIMATES: THEORETICAL AND SIMULATED RESULTS	
16:30	I.3.3	A. Praskovsky, E. Praskovskaya, G. Hassenpflug et al.	WIND AND TURBULENCE MEASUREMENTS BY THE MIDDLE AND UPPER ATMOSPHERE RADAR USING UCAR-STARs METHOD	
16:45	I.3.4	G. Hassenpflug, M. Yamamoto and S. Fukao	RANDOM ERROR ANALYSIS OF SPACED ANTENNA TECHNIQUE FOR CORRELATION LENGTH MEASUREMENTS	
16:54	I.3.6	S. Franke, W. Hocking and G. Swenson	METEOR AND LIDAR WIND COMPARISONS FROM MAUI, HAWAII	
17:03	I.3.8	P. Hoffmann, W. Singer, E. Becker et al.	LONGITUDINAL AND LATITUDINAL DEPENDENCY OF THE INFLUENCE OF STRATOSPHERIC CIRCULATION DISTURBANCES ON THE MESOSPHERIC WIND FIELD	
17:18	I.3.10	C. Haldoupis and D. Pancheva	SPORADIC E LAYER DEPENDENCE ON PLANETARY WAVES: AN EVENT STUDY SHOWING AN INDIRECT RELATIONSHIP THROUGH MODULATED ATMOSPHERIC TIDES	

17:33 *Coffee break*

Chair: W. Hocking & T. Van Zandt

18:00	I.3.11	<u>N. Gavrilov</u>	RADAR, OPTICAL AND SATELLITE STUDIES OF CLIMATOLOGY AND EFFECTS OF ATMOSPHERIC GRAVITY WAVES AND TURBULENCE	I
18:20	I.3.13	V. Reddy, K. Kumar, N. Babu et al. (<u>K. Kishore Kumar</u>)	SEASONAL VARIATION OF GRAVITY WAVE ACTIVITY IN THE TROPOSPHERE AND LOWER STRATOSPHERE OVER GADANKI	
18:35	I.3.14	J. Rao, V. Reddy, K. Kumar et al. (<u>K. Kishore Kumar</u>)	FREQUENCY SPECTRA OF VERTICAL VELOCITIES OBSERVED OVER A LOW LATITUDE BY INDIAN MST RADAR	
18:50	I.3.15	E. Pavelin and J. Whiteway (<u>D. Hooper</u>)	INTERACTING GRAVITY WAVES ABOVE A MID-LATITUDE JET STREAM	
19:05	I.3.16	D. Narayana Rao, B. Vasantha, K. Kumar et al.	STUDIES ON WINDS AND MOMENTUM FLUXES USING UHF RADAR OBSERVATION OVER GADANKI (13.5°N, 79.2°E)	
19:20	I.3.18	S. Kamala, D. Narayana Rao, V. Reddy et al. (<u>K. Kishore Kumar</u>)	GRAVITY WAVE STUDIES IN THE MIDDLE ATMOSPHERE FROM THE INDIAN MST RADAR USING HODOGRAPH TECHNIQUE	
19:29	I.3.19	J. Röttger, M. Hsu, W. Tsai et al.	DEEP PENETRATIVE CONVECTION AND GENERATION OF WAVE OSCILLATION OBSERVED WITH THE CHUNG-LI VHF RADAR	

Thursday May 15

Chair: W. Hocking & R. Doviak

08:00	I.3.21	P. Franke (<u>D. Fritts</u>)	NUMERICAL SIMULATION OF RADAR-BACKSCATTER FROM TURBULENT STRUCTURES GENERATED BY DIRECT NUMERICAL SIMULATION OF THE FLUID EQUATIONS	I
08:20	I.3.37	<u>E. Kudeki</u> , M. Sarango and G. Lehmacher	HIGH RESOLUTION BACKSCATTER PROBING OF THE MST REGION AT JICAMARCA	
08:35	I.3.24	G. Lehmacher, E. Kudeki and M. Sarango	WAVES AND INSTABILITIES IN RECENT MESOSPHERIC OBSERVATIONS AT JICAMARCA	
08:50	I.3.25	<u>R. Wilson</u>	TURBULENT DIFFUSIVITY INFERRED FROM MST RADAR MEASUREMENTS IN THE FREE ATMOSPHERE : A REVIEW	I
09:10	I.3.26	<u>R. Wilson</u> and F. Dalaudier	SIMULTANEOUS OBSERVATIONS OF ATMOSPHERIC TURBULENCE IN THE LOWER STRATOSPHERE FROM BALLOON SOUNDINGS AND ST RADAR MEASUREMENTS	
09:19	I.3.27	T. Van Zandt, G. Nastrom, J. Furumoto et al.	NEW MST RADAR METHODS FOR MEASURING THE TURBULENT KINETIC ENERGY DENSITY	
09:34	I.3.28	G. Nastrom, P. Rao and V. Sivakumar (<u>T. Van Zandt</u>)	MEASUREMENTS OF ATMOSPHERIC TURBULENCE WITH THE DUAL-BEAMWIDTH METHOD USING THE MST RADAR AT GADANKI, INDIA	
09:43	I.3.29	V. Melnikov, M. Fang	WEATHER RADAR OBSERVATIONS OF TURBULENCE AND SHEAR	

- 09:58 I.3.31 and R. Doviak
E. Hermawan and T. Tsuda
10:07 I.3.33 W. Hocking
- [ESTIMATION OF TURBULENCE ENERGY DISSIPATION RATE AND VERTICAL EDDY DIFFUSIVITY WITH THE MU RADAR RASS](#)
[A NEW APPROACH TO FAST AND ACCURATE CALCULATION OF SPECTRAL BEAM-BROADENING FOR TURBULENCE STUDIES](#)
- 10:22 *Coffee break*
- Chair: W. Hocking & R. Rodriguez**
- 11:00 I.3.34 S. Fukao, F. Masatomo and M. Yamamoto
11:15 I.3.39 K. Kubo, J. Röttger and S. Fukao
11:24 I.3.40 D. Holdsworth, I. Reid, J. Woithe et al.
11:33 I.3.41 W. Singer, J. Bremer, A. Muellemann et al.
- [POSSIBLE CROSS-TROPOPAUSE TRANSPORT PROCESSES IN THE TROPICS](#)
[UPPER MESOSPHERE TEMPERATURE CHANGES OBSERVED IN PMSE AND INCOHERENT SCATTER DURING A STRONG POLAR CAP ABSORPTION EVENT](#)
[COMPARISON OF WIND AND TEMPERATURE ESTIMATES MADE USING THE BUCKLAND PARK ALL-SKY INTERFEROMETRIC METEOR RADAR AND COLOCATED INSTRUMENTS](#)
[METEOR RADAR TEMPERATURES COMPARED WITH OH* OBSERVATIONS AND CO-LOCATED LIDAR AND ROCKET MEASUREMENTS](#)
- 12:30 *Lunch on your own*¹
- 16:00 *Group Picture and Guided tour to UDEP (Universidad de Piura) & radar*
- 19:00 [Poster Session I at Río Verde \(Snack Included\)](#)

SESSION I.4 : METEOROLOGICAL PHENOMENA AND APPLICATIONS

Conveners: K. Gage and D. Riggin

Friday May 16

Chair: K. Gage & D.N. Rao

- 08:00 I.4.1 S. Koch (K. Gage)
08:25 I.4.3 M. Petitdidier, V. Klaus and P. Tabary
08:40 I.4.4 Y. Shibagaki, M. Yamanaka, M. Fukase et al.
08:55 I.4.6 P. Johnston, L. Hartten, D. Carter et al.
09:10 I.4.16 H. Hashiguchi, T. Seto, S. Fukao et al.
- [IMPROVING MESOSCALE ANALYSIS AND PREDICTION USING WIND PROFILER DATA](#)
[MESOSCALE ALPINE PROGRAMME \(MAP\): SYNERGIES BETWEEN WIND PROFILERS AND DOPPLER WEATHER RADARS](#)
[MESO-ALPHA-SCALE WIND FIELD AND PRECIPITATING CLOUDS IN TYPHOON 9426 \(ORCHID\) OBSERVED BY THE MU RADAR](#)
[RANGE, RESOLUTION, AND SAMPLING](#)
[AN OBSERVATIONAL STUDY ON INTRASEASONAL VARIATIONS WITH EQUATORIAL ATMOSPHERE RADAR\(EAR\) IN WEST SUMATERA, INDONESIA](#)

09:25 *Coffee break*

Chair: D. Riggin & D.N. Rao

- 10:00 I.4.9 K. Kishore Kumar and A. Jain
10:15 I.4.10 C. Pan, M. Hsu, L. Chung et al. (J. Röttger)
10:30 I.4.11 C. Williams and K. Gage
10:50 I.4.12 D. Narayana Rao, K. Kumar, V. Reddy et al.
11:05 I.4.13 C. Lucas
11:20 I.4.14 K. Reddy, T. Kozu and
- [A COMPREHENSIVE STUDY ON TROPICAL MESOSCALE CONVECTIVE SYSTEMS USING VHF AND UHF RADARS OVER A TROPICAL STATION](#)
[VHF RADAR REFLECTIVITY AND RAINFALL RATE DURING TYPHOON PASSAGES OVER TAIWAN](#)
[VERTICAL STRUCTURE OF RAIN DROP SIZE DISTRIBUTIONS RETRIEVED FROM PROFILER OBSERVATIONS](#)
[DERIVING DROP SIZE DISTRIBUTION FROM VHF AND UHF DOPPLER RADAR SPECTRA](#)
[RAINDROP SIZE CHARACTERISTICS OF AUSTRALIAN CLOUDS](#)
[MICROPHYSICAL AND KINEMATIC CHARACTERISTICS OF MONSOON PRECIPITATING CLOUDS USING WIND PROFILERS AND](#)

- 11:35 I.4.505 Y. Ohno
T. Shimomai, T. Kozu
and S. Fukao [DISDROMETER AT GADANKI, INDIA](#)
[RAINDROP SIZE DISTRIBUTION ESTIMATED FROM THE EAR](#)
[OBSERVATION IN INDONESIA](#)
- 11:50 I.4.503 J. Furumoto, K. Kurimoto
and T. Tsuda [CONTINUOUS OBSERVATIONS OF HUMIDITY PROFILES WITH THE](#)
[MU RADAR-RASS](#)

12:30 *Group Lunch at Río Verde*

15:00 [Poster Session II at Río Verde](#)

19:00 *Public Lectures at UDEP (Universidad de Piura) by:*

-B. Balsley:

- 'Medio siglo de cooperación científica internacional con mis colegas peruanos' ('A Half Century of Cooperation with my Peruvian Colleagues')

-R. Woodman:

- 'Exploración espacial desde tierra: Contribuciones peruanas al conocimiento' ('Space exploration from the ground: Peruvian contributions to human knowledge')

Saturday May 17

Chair: K. Gage

- 08:00 I.4.17 K. Takahashi [TROPOSPHERIC WIND MEASUREMENTS WITH THE PIURA](#)
[BOUNDARY LAYER RADAR DURING EXTREME RAINFALL EVENTS IN](#)
[2002](#)
- 08:15 I.4.18 S. Vogt and G. Jaubert [FOEHN IN THE RHINE VALLEY AS SEEN BY A WIND-PROFILER-RASS](#)
[SYSTEM AND COMPARISON WITH THE NONHYDROSTATIC MODEL](#)
[MESO-NH](#)
- 08:30 I.4.19 V. Guénard, J. Caccia,
B. Bénech et al. [STUDY OF A MESOSCALE LAND-TO-SEA LOW-LEVEL JET WITH A](#)
[NETWORK OF UHF WIND PROFILERS: CASES OF THE MISTRAL WIND](#)
- 08:45 I.4.20 A. Serafimovich, P.
Hoffmann, D. Peters et
al. [RADAR OBSERVATIONS OF INERTIA-GRAVITY WAVES OVER](#)
[NORTHERN GERMANY](#)
- 09:00 I.4.21 A. Adachi, W. Clark, K.
Gage et al. [WIND PROFILER AND TOWER OBSERVATIONS OF GRAVITY](#)
[CURRENT AND RELATED SOLITARY WAVE](#)
- 09:15 I.4.22 A. Praskovsky and E.
Praskovskaya [ADVANCED MEASUREMENTS OF ATMOSPHERIC TURBULENCE WITH](#)
[SPACED ANTENNA PROFILING RADARS: THE FIRST RESULTS](#)
- 09:30 I.4.23 J. Röttger [THE INCLINATION OF REFLECTIVITY STRATIFICATIONS](#)
- 09:45 I.4.24 B. Bénech, F. Girard-
Ardhuin, B. Campistron
et al. [ESTIMATION OF MOMENTUM AND VIRTUAL SENSIBLE HEAT](#)
[TURBULENT FLUXES WITH AN UHF/RASS WIND PROFILER.](#)
[COMPARISON WITH IN SITU MEASUREMENTS](#)

10:00 *Coffee break*

SESSION I.5 : OPERATIONAL ASPECTS AND RECENT SYSTEM DEVELOPMENT

Conveners: I. Reid and D. Thorsen

Saturday May 17

Chair: I. Reid & J. Sahr

- 10:30 I.5.1 M. Ishihara and H.
Hashiguchi (S. Fukao) [THE WIND PROFILER NETWORK OF JAPAN MET AGENCY](#)
- 10:45 I.5.3 D. Scipión, J. Chau and
L. Flores [BOUNDARY LAYER AND TROPOSPHERIC RADAR SYSTEMS FOR](#)
[ENSO STUDIES IN NORTHERN PERU](#)
- 11:00 I.5.5 W. Clark, K. Gage, C. [MOVEABLE UHF RADAR PROFILER/DISDROMETER SYSTEMS AS A](#)

11:15	I.5.6	Williams et al. <u>B. Vandeppeer</u> , B. Fuller, A. Murphy et al.	CALIBRATION STANDARD PERFORMANCE ENHANCEMENTS TO THE VHF BOUNDARY LAYER TECHNIQUE
11:30	I.5.7	<u>C. Gaffard</u> , T. Hewison and J. Nash	TOWARD A MULTISENSOR GROUND BASED REMOTE SENSING STATION
11:45	I.5.506	G. Michhue and <u>R. Woodman</u>	DIGITAL RECEIVER TECHNOLOGY AT JICAMARCA

12:30 *Lunch on your own* ¹

Chair: D. Thorsen & T. Sato

16:00	I.5.8	<u>P. Lopez-Dekker</u> and S. Frasier	APPLICATIONS IN CALIBRATION AND BEAMFORMING WITH THE TURBULENT EDDY PROFILER
16:15	I.5.9	R. Ney, S. Bonaimé, F. Dolon et al.	ELECTRONIC DIGITAL BEAMFORMING IMPLEMENTATION FOR RADARS
16:30	I.5.515	<u>M. Sarango</u> , J. Chocos, R. Woodman et al.	POINT-TO-POINT VHF COMMUNICATIONS VIA THE EQUATORIAL ELECTROJET
16:45	I.5.11	<u>J. Röttger</u>	ON-LINE ADAPTIVE DC-CLUTTER REMOVAL
17:00	I.5.513	<u>M. Sarango</u> , <u>R. Woodman</u> and D. Cordova	ON THE RADIATION EFFICIENCY OF COCO ANTENNAS

17:15 *Coffee break*

17:45	I.5.13	<u>M. Tsutsumi</u>	NEW APPROACHES TO POLAR ATMOSPHERE STUDIES USING RADARS
18:00	I.5.14	R. Vuthaluru, D. Holdsworth, R. Vincent et al. (I. Reid)	DIFFERENTIAL ABSORPTION MEASUREMENTS USING THE BUCKLAND PARK MF RADAR
18:15	I.5.15	W. Singer, R. Latteck and D. Holdsworth	A NEW NARROW BEAM MF RADAR AT 3 MHZ FOR STUDIES OF THE HIGH-LATITUDE MIDDLE ATMOSPHERE: SYSTEM DESCRIPTION AND FIRST RESULTS
18:30	I.5.16	J. Nash, <u>C. Gaffard</u> , T. Oakley et al.	CURRENT STATUS OF THE WIND PROFILER NETWORK IN EUROPE (CWINDE) AND THE AIMS OF THE EUMETNET PROJECT WINPROF
18:45	I.5.17	<u>D. Narayana Rao</u>	A DECADE OF SCIENTIFIC CONTRIBUTIONS FROM INDIAN MST RADAR AND FUTURE DEVELOPMENTS

20:30 *MST10 Dinner*

Sunday May 18

8:00 *Full-day group trip* ²

PWG PERMANENT WORKING GROUPS

Monday May 19

8:00 PWG 1: SYSTEM CALIBRATION AND DEFINITIONS

Introduction by the chairmen (J. Röttger)

- J. Röttger [MST RADAR CALIBRATION TO OBTAIN ABSOLUTE SIGNAL POWER](#)

Other contributions resulting from ad-hoc matters in Section I

Discussion

8:30 PWG 2: DATA ANALYSIS, VALIDATION AND PARAMETER DEDUCTION METHODS

Introduction by the chairmen (E. Kudeki)

- [W. Hocking](#) [PARAMETER COMPARISON METHODS IN GEOPHYSICAL STUDIES](#)
- [C. Meek](#) [FULL CORRELATION ANALYSIS: ANALYSIS MODEL, DATA SELECTION, QUALITY INDICATORS FOR SASKATOON-TYPE MFR DATA](#)
- F. Kuo, C. Liu, K. Chen et al. (J. Röttger) [NEW METHODS TO DEDUCE GRAVITY WAVE PARAMETERS FROM RADAR DATA](#)
- [E. Boyer](#), M. Petitdidier and P. Larzabal [PARAMETRIC ESTIMATION OF SPECTRAL MOMENTS OF OVERLAPPED WEATHER DOPPLER ECHOES BY THE USE OF HIGH-RESOLUTION ALGORITHMS](#)

Other contributions resulting from ad-hoc matters in Section I
Discussion

9:30 **PWG 3: ACCURACIES AND REQUIREMENTS FOR METEOROLOGICAL APPLICATIONS**

Introduction by the chairmen (G. Nastrom & J. Chau)

- [P. Johnston](#) [PROFILER ACCURACY](#)
- [C. Lucas](#) SOUTHERN HEMISPHERE SYNOPTIC METEOROLOGY
- [K. Takahashi](#) RADARS AND THEIR APPLICATION TO METEOROLOGICAL PROBLEMS IN PERU
- [C. Gaffard](#) NETWORKS OF RADARS AND THEIR APPLICATION TO METEOROLOGICAL PROBLEMS
- [C. La Hoz](#) NEUTRAL WINDS IN THE D-E REGION

Other contributions resulting from ad-hoc matters in Section I

10:30 *Coffee break*

11:00 **PWG 3: ACCURACIES AND REQUIREMENTS FOR METEOROLOGICAL APPLICATIONS** (cont.)

Discussion

12:00 **PWG 4: INTERNATIONAL COLLABORATIONS**

Introduction by the chairmen (R. Woodman, S. Fukao & J. Röttger)

- [S. Fukao](#) [AN ONGOING JAPANESE PROJECT: COUPLING PROCESSES IN THE EQUATORIAL ATMOSPHERE](#)
- [J. Röttger](#) [REPORT ON THE THIRD INTERNATIONAL SCHOOL ON ATMOSPHERIC RADAR – ISAR3 – HELD IN NOVEMBER/DECEMBER AT THE ABDUS SALAM INTERNATIONAL CENTER FOR THEORETICAL PHYSICS IN TRIESTE, ITALY](#)
- [D. Narayana Rao](#) TROPICAL NETWORK OF RADARS

Other contributions resulting from ad-hoc matters in Section I
Discussion

12:30 *Lunch on your own*¹

SESSION II: NOVEL PERSPECTIVES AND UNSOLVED ISSUES SESSIONS

Conveners: P. Chilson, S. Fukao & J. Röttger

Monday May 19

Chair: J. Chau

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| 15:00 II.E.1 | T. Sato and K. Kamio | AN ADAPTIVE CLUTTER REJECTION SCHEME FOR MST RADARS | |
| 15:30 II.E.2 | W. Hocking | DIAGNOSTIC CAPABILITIES OF MEASUREMENTS OF BACKSCATTER ANISOTROPY. | |

16:00 *Coffee break*

Chair: S. Fukao

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| 16:30 II.E.3 | | WHAT IS THE FUTURE OF THE MULTI-FREQUENCY TECHNIQUES? | |
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17:00	II.E.5	<u>H. Luce</u> <u>J. Röttger</u>	WHAT IS TURBULENCE SEEN BY VHF RADAR?	
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Tuesday May 20**Chair: R. Woodman**

08:30	II.E.7	<u>W. Hocking</u> , <u>N. Mitchell</u> , <u>S. Franke et al.</u>	APPLICATIONS OF A WORLD-WIDE NETWORK OF MESOSPHERIC RADARS, WITH SPECIAL EMPHASIS ON THE COLUMBIA SPACE SHUTTLE DISASTER	
09:00	II.E.8	<u>A. Praskovsky</u> and <u>E. Praskovskaya</u>	THE STRUCTURE FUNCTION-BASED APPROACH TO DATA ANALYSIS FOR SPACED ANTENNA RADARS: A COMPARISON WITH TRADITIONAL TECHNIQUES	
09:30	II.E.9	<u>J. Sahr</u>	VHF PARASITIC RADAR INTERFEROMETRY FOR MST ZENITH SOUNDING	

10:00 *Coffee break***Chair: E. Kudeki, D. Farley & J. Röttger**

10:30 D-E-F region, PMSE

Chair: K. Gage, B. Balsley & D. Hooper

11:10 Meteorology Models

12:00 *Lunch on your own*¹**Chair: F. Dalaudier, R. Woodman & W. Hocking**

13:30 Sheets, Layers, turbulence, simulations (DNS)

14:20 General Issues

Chair: J. Röttger, J. Chau & J. Sahr

15:30 Resolutions
Summary
Conclusions
Closing

POSTER SESSIONS**Thursday May 15****20:00 POSTER SESSION I****Chairs: G. Hussey, G. Lehmacher, R. Palmer & J. Urbina****SESSION I.1 : RADAR SCATTERING PROCESSES IN THE NEUTRAL ATMOSPHERE**

I.1.4	<u>A. Ghosh</u> , <u>S. Das</u> , <u>V. Anandan et al. (K. Kishore Kumar)</u>	ASPECT SENSITIVE CHARACTERISTICS OF RADAR BACKSCATTERERS AT VHF: SIMULTANEOUS MST RADAR AND GPS SONDE MEASUREMENTS	
I.1.10	<u>T. Yu</u> and <u>W. Brown (R. Palmer)</u>	HIGH-RESOLUTION ATMOSPHERIC PROFILING USING SIMULTANEOUS MULTIPLE RECEIVERS AND MULTIPLE FREQUENCIES	
I.1.501	<u>R. Rodriguez</u> , <u>F. Sosa</u> and <u>M. Carrion</u>	ATMOSPHERIC REFRACTIVITY PROFILES OVER PIURA ST RADAR	
I.1.502	<u>R. Latteck</u> , <u>W. Singer</u>	OBSERVATIONS OF MESOSPHERE SUMMER ECHOES AT DIFFERENT SITES BETWEEN 54°N AND 79°N USING CALIBRATED RADAR EXPERIMENTS	

and R. Rüster

I.1.505 S. Das, K. Kishore
Kumar, A. Jain et al.

[VHF-RADAR OBSERVATIONS OF TEMPERATURE SHEETS IN THE STRATOSPHERIC-TROPOSPHERIC REGION](#)

SESSION I.2 : D, E, AND F REGION COHERENT SCATTERING

- I.2.501 C. Pan, P. Rao and C. Chen [MORPHOLOGICAL STUDY OF THE FIELD-ALIGNED E LAYER IRREGULARITIES OBSERVED BY THE GADANKI VHF RADAR](#)
- I.2.502 C. Haldoupis, A. Bourdillon, A. Kamburelis et al. [CONTINUOUS WAVE INTERFEROMETER OBSERVATIONS OF MIDLATITUDE E REGION BACKSCATTER](#)
- I.2.503 J. St.-Maurice, R. Choudhary, W. Ecklund et al. [THE VERTICAL UP AND DOWN SPECTRAL ASYMMETRY OF THE EQUATORIAL ELECTROJET REVISITED](#)
- I.2.504 S. Sripathi, A. K Patra, V. Sivakumar et al. (K. Kishore Kumar) [HIGH RESOLUTION VHF RADAR OBSERVATIONS OF DAYTIME QP STRUCTURES IN LOWER E REGION OVER GADANKI](#)
- I.2.505 A. K Patra, S. Sripathi, V. Sivakumar et al. (K. Kishore Kumar) [STATISTICAL CHARACTERISTICS OF VHF RADAR OBSERVATIONS OF LOW-LATITUDE E REGION FIELD-ALIGNED IRREGULARITIES OVER GADANKI](#)
- I.2.506 R. Morris, D. Holdsworth, D. Monselesan et al. [MF RADAR AND DIGISONDE MEASUREMENTS OF E-REGION BRAGG SCATTER DOPPLER SPECTRAL BANDS UNDER THE SOUTHERN POLAR CUSP](#)
- I.2.507 T. Yokoyama, M. Yamamoto and S. Fukao [ROCKET OBSERVATION OF ELECTRIC FIELD CONDUCTED IN THE SEEK-2](#)
- I.2.509 J. St.-Maurice, R. Choudhary, W. Ecklund et al. [FAST TYPE-I WAVES IN THE EQUATORIAL ELECTROJET: EVIDENCE FOR NON-ISOTHERMAL ION-ACOUSTIC SPEEDS IN THE LOWER E REGION](#)
- I.2.511 E. Lau, S. Avery and J. Avery [PRELIMINARY STATISTICAL ANALYSIS OF THE CHARACTERISTICS OF METEOR ECHOES COLLECTED USING AN ALL-SKY METEOR RADAR AT PIURA, PERU](#)
- I.2.512 J. Chau, R. Woodman, M. Milla et al. [OBSERVATIONS OF METEOR-HEAD ECHOES USING THE JICAMARCA 50 MHZ RADAR IN INTERFEROMETER MODE](#)
- I.2.516 C. Meek [SEARCH FOR PMSE MF CHARACTERISTICS \(OTHER THAN SIGNAL\)](#)
- I.2.517 J. Fernandez, R. Palmer, P. Chilson et al. [OBSERVATIONS OF PMSE USING RANGE IMAGING \(RIM\) ON THE EISCAT VHF RADAR: PHASE CALIBRATION ISSUES](#)
- I.2.520 M. Zecha, J. Röttger, F. Lübken et al. [PMSE, NLC AND TEMPERATURE OBSERVATIONS DURING THE ROMA-2001 CAMPAIGN ON SVALBARD](#)
- I.2.521 M. Zecha, J. Bremer and P. Hoffmann [RESULTS OF SEVERAL YEARS MSE OBSERVATIONS AT KÜHLUNGSBORN \(54N\)](#)
- I.2.522 R. Selvamurugan [VHF RADAR OBSERVATIONS ON METEOR INDUCED TURBULENT PLASMA IRREGULARITY LAYERS](#)

SESSION I.3 : WINDS, WAVES AND TURBULENCE IN THE LOWER AND MIDDLE ATMOSPHERE AND THE LOWER THERMOSPHERE

- I.3.5 P. Srinivasulu (K. Kishore Kumar) [COMPARISON OF DBS AND SA WINDS: PRELIMINARY RESULTS WITH INDIAN MST RADAR](#)
- I.3.17 R. Selvamurugan (K. Kishore Kumar) [SHORT PERIOD GRAVITY WAVE MAGNITUDES AT EQUATORIAL LOW LATITUDE MESOSPHERE-LOWER THERMOSPHERE \(MLT\) REGION](#)
- I.3.30 D. Narayana Rao, B. Vasantha, K. Kumar et al. (K. Kishore Kumar) [TURBULENCE STUDIES USING UHF RADAR OBSERVATIONS OVER GADANKI \(13.5°N, 79.2°E\)](#)
- I.3.38 R. Selvamurugan (K. Kishore Kumar) [MESOSPHERE-LOWER THERMOSPHERE NEUTRAL WIND OBSERVATIONS USING METEOR TRACES AS TRACERS](#)
- I.3.501 E. Praskovskaya, A. [APPLICATION OF THE UCAR-STARS METHOD TO ATMOSPHERIC SPACED ANTENNA RADARS](#)

- Praskovsky, D. Riggin et al.
- I.3.502 D. Riggin and Q. Zhou [MEASUREMENTS OF WINDS AND MOMENTUM FLUXES IN THE MLT USING THE DUAL-BEAM SYSTEM AT ARECIBO](#)
- I.3.504 N. Gavrilov and S. Fukao [MU RADAR ESTIMATION OF DOWNWARD TURBULENT OZONE FLUXES NEAR THE TROPOPAUSE](#)
- I.3.505 C. Meek [LARGE VELOCITIES MEASURED AT MF AND HEIGHTS ABOVE 100KM: REAL OR SPURIOUS?](#)
- I.3.506 H. Hashiguchi, M. Yamamoto, S. Fukao et al. [OBSERVATIONS IN THE TROPICAL TROPOPAUSE REGION WITH THE EQUATORIAL ATMOSPHERE RADAR \(EAR\)](#)
- I.3.507 S. Sripathi, A. K Patra, P. B Rao et al. (K. Kishore Kumar) [MERIDIONAL NEUTRAL WINDS DERIVED USING THE E REGION FIELD ALIGNED IRREGULARITIES \(FAI\) AS TRACERS OVER GADANKI AND A COMPARISON WITH MODEL AND HRDI DATA](#)
- I.3.508 V. Sivakumar and P. Rao (K. Kishore Kumar) [LIDAR OBSERVATIONS OF MIDDLE ATMOSPHERIC GRAVITY WAVE ACTIVITY OVER A LOW LATITUDE](#)
- I.3.509 R. Latteck, W. Singer and N. Engler [APPLICATION OF THE DUAL-BEAM WIDTH METHOD TO A NARROW BEAM MF RADAR FOR ESTIMATION OF SPECTRAL WIDTH](#)
- I.3.511 K. Chandra Reddy, D. Narayana Rao, A. Jain et al. (K. Kishore Kumar) [OBSERVATIONS OF LOW-LEVEL ATMOSPHERIC JET OVER GADANKI](#)

Friday May 16

15:00 POSTER SESSION II

Chairs: P. Johnston, Y. Chu, P. Hoffmann, F. Lind, I. Reid, D. Riggin & N. Gavrilov

SESSION I.4 : METEOROLOGICAL PHENOMENA AND APPLICATIONS

- I.4.501 M. Teshiba, M. Yamanaka, H. Hashiguchi et al. [TYPHOON SPIRAL BAND STRUCTURES OBSERVED WITH A WIND PROFILER NETWORK](#)
- I.4.502 A. McDonald, T. Carey-Smith, G. Fraser et al. [THE EFFECT OF PRECIPITATION ON CLEAR-AIR RETURNS OF VHF RADAR](#)
- I.4.504 Y. Shibagaki, T. Kozu, T. Shimomai et al. [OBSERVATIONS OF TROPICAL PRECIPITATION SYSTEMS WITH THE EAR, BLR AND RAIN RADAR](#)
- I.4.506 K. Reddy, D. Narayana Rao, T. Kozu et al. [SEVERE WEATHER OBSERVATIONS USING VHF/UHF ATMOSPHERIC WIND ROFILERS OVER INDIA DURING 1999](#)
- I.4.507 S. Sharma, K. Chandra Reddy and A. Jain (K. Kishore Kumar) [STUDY OF TROPICAL PRECIPITATION WITH RESPECT TO RAIN DROP SIZE DISTRIBUTION AND UHF DOPPLER RADAR SPECTRA](#)
- I.4.508 K. Rao and K. Nakamura [THREE DIMENSIONAL STRUCTURE OF RAIN ASSOCIATED WITH INDIAN MONSOON DEEP CLOUD SYSTEMS OBSERVED BY TRMM PRECIPITATION RADAR AND METEOSAT](#)
- I.4.509 K. Reddy, B. Geng and H. Yamada [APPLICATION OF LOWER ATMOSPHERIC WIND PROFILER FOR MONITORING MEIYU/BAIU WINDS AND PRECIPITATING CLOUD SYSTEMS](#)
- I.4.510 Y. Umemoto, M. Teshiba, Y. Shibagaki et al. [BOUNDARY LAYER RADAR OBSERVATIONS OF BAIU-FRONTAL MESOSCALE CONVECTIVE SYSTEMS IN THE LEEWARD SIDE OF SMALL ISLANDS \(KOSHIKIJIMA LINES\)](#)
- I.4.511 K. Kishore Kumar, J. Joseph, A. Jain et al. [VHF RADAR OBSERVATIONS OF WEAK ECHO REGIONS IN TROPICAL MESOSCALE CONVECTIVE SYSTEMS](#)
- I.4.514 L. Flores, J. La Madrid and J. Chau [TROPOSPHERIC WINDS MEASURED WITH THE PIURA ST RADAR: NORMAL VS. "EL NIÑO 1997-98" CONDITIONS](#)
- I.4.515 K. Reddy, K. Nakamura, T. Kozu et al. [TROPICAL ATMOSPHERIC BOUNDARY LAYER STUDIES USING WIND PROFILER AT GADANKI, INDIA](#)
- I.4.516 E. Hermawan, Y. Shibagaki and T. Kozu [A FINE STRUCTURE OF ZONAL AND MERIDIONAL WIND VELOCITY DUE TO RAIN RATE ANOMALIES OVER SUMATERA ISLAND OBSERVED WITH THE EAR](#)
- I.4.519 D. Hooper and H. Reid [THE SIGNATURE OF MID-LATITUDE CONVECTION OBSERVED BY MST RADAR](#)
- I.4.520 K. Kishore Kumar and A. [PRELIMINARY OBSERVATIONS OF CONVECTIVE BOUNDARY LAYER OVER GADANKI \(13.5°N, 79.2°E\) USING UHF WIND PROFILER](#)

Jain

- I.4.521 P. Kishore, P. Namboothiri, K. Igarashi et al. (K. Reddy) [STUDIES ON MOMENTUM FLUXES USING MST RADAR WINDS OBSERVED AT GADANKI \(13.5 N, 79.2 E\), INDIA](#)
- I.4.522 B. Heo, K. Kim, B. Campistron et al. [ESTIMATION OF THE TROPOPAUSE HEIGHT USING THE VERTICAL ECHO PEAK AND ASPECT SENSITIVITY CHARACTERISTICS OF A VHF RADAR](#)
- I.4.523 M. G, M. K and S. Das [TROPOPAUSE FLUCTUATIONS DURING THE PASSAGE OF A TROPICAL CYCLONE](#)

SESSION I.5 : OPERATIONAL ASPECTS AND RECENT SYSTEM DEVELOPMENT

- I.5.10 P. Srinivasulu (K. Kishore Kumar) [INSTRUMENTAL ERRORS IN RADAR PHASE CALIBRATION AND ASSOCIATED CORRECTION](#)
- I.5.501 T. Carey-Smith, A. McDonald, J. Baggaley et al. [ANTENNA BEAM VERIFICATION AND CALIBRATION USING COSMIC NOISE](#)
- I.5.502 M. Petitdidier and P. Kafando [ARECIBO UHF CALIBRATION USING NEXRAD , DISDROMETER AND RAINGAUGE DATA](#)
- I.5.503 Y. Barbin, H. Luce, F. Ghio et al. [THE DESIGN OF A NEW MEDIUM SCALE MULTIMODE ST RADAR: ARCHITECTURE, SIMULATIONS AND TRADE-OFFS.](#)
- I.5.504 N. Kawano and S. Fukao [COMPARISON OF WIND ESTIMATION ERRORS FOR THE SPACED ANTENNA TECHNIQUE](#)
- I.5.507 D. Holdsworth and I. Reid [EXPERIMENT AND ANALYSIS TECHNIQUES USED FOR THE BUCKLAND PARK ALL-SKY INTERFEROMETRIC METEOR RADAR](#)
- I.5.509 E. Lau, S. Avery and J. Avery [METEOR ECHO RETRIEVALS USING COLLOCATED NARROW-BEAM RADAR AND ALL-SKY INTERFEROMETER AT PIURA, PERU: COMPARISON OF MEASURED WINDS](#)
- I.5.511 M. Tsutsumi and A. Yukimatu [NEW SUPERDARN RAW TIME SERIES ANALYSIS METHOD AND ITS POSSIBLE APPLICATIONS TO UPPER AND MIDDLE ATMOSPHERE RESEARCHES](#)
- I.5.516 C. Morse, R. Goodrich, L. Cornman et al. [QUALITY CONTROL FOR DOPPLER WIND PROFILERS USING NIMA](#)
- I.5.517 A. Kolatkar and D. Thorsen [RADAR CONTROLLER](#)
- I.5.518 R. Woodman and O. Castillo [SOUSY RADAR AT JICAMARCA: SYSTEM DESCRIPTION AND FIRST OBSERVATIONS](#)
- I.5.519 S. Fukao, H. Hashiguchi, M. Yamamoto et al. [THE EQUATORIAL ATMOSPHERE RADAR \(EAR\): SYSTEM AND NEW RESULTS](#)
- I.5.520 D. Hooper, C. Gaffard, E. Norton et al. [THE NERC MST RADAR FACILITY AT ABERYSTWYTH](#)
- I.5.521 R. Morris, D. Murphy, I. Reid et al. [VHF ATMOSPHERIC AND METEOR RADAR INSTALLATION AT DAVIS, ANTARCTICA: PRELIMINARY OBSERVATIONS](#)
- I.5.522 W. Hocking, E. Campos and I. Zawadzki [VORTICAL MOTIONS OBSERVED WITH THE NEW MCGILL VHF RADAR AND ASSOCIATED DYNAMICAL CHARACTERISTICS](#)
- I.5.523 C. Le Gac, R. Ney, H. De Feraudy et al. [A NEW MINIRADAR PROJECT TO INVESTIGATE THE URBAN CANOPY : THE CURIE \(CANOPÉE URBAINE RADAR POUR L'INVESTIGATION DES ECHANGES : CANOPY URBAN RADAR FOR INVESTIGATION OF EXCHANGES\)](#)

¹ [followed by traditional nap or by sports/other activities](#)

² Piura-Olmos-Túcume-Sipan Museum-Piura