

SuperDARN 2008 Workshop

02-06 June 2008

Newcastle, Australia



Program and abstracts

SuperDARN 2008 Workshop Program

Sunday 01 June

16:00-18:30 Registration
18:30-20:00 Ice-breaker

Monday 02 June

01 Status reports Convenor: P. Dyson

09:00-10:00	<i>M. Lester</i>	Radar Status Overview
10:00-10:10	<i>E. Amata</i>	Report on the Dome C radars status
10:10-10:20	<i>C. Hanuise</i>	Status of the French SD radars
10:20-10:50		Tea-break
10:50-11:00	<i>R. J. Barnes</i>	Software Status Report
11:00-11:10	<i>J. Wild</i>	The THEMIS and CLUSTER satellite missions: status, operational planning and opportunities for collaboration

02 Data analysis and new techniques Convenors: C. Waters & J. Whittington

11:10-11:30	<i>R. T. Parris, W. A. Bristow, S. Shuxiang</i>	First Results of Imaging, Super Stereo, and Other Upgrades on the Kodiak Radar
11:30-11:50	<i>P. V. Ponomarenko, C. L. Waters, and F. W. Menk</i>	Recovering ionospheric velocities from SuperDARN returns contaminated by ground/sea scatter
11:50-12:10	<i>R. Greenwood, M. Parkinson, and P. Dyson</i>	Propagation mode and scatter type identification of SuperDARN echoes using high Doppler resolution spectral analysis
12:30-13:30		Lunch
13:30-13:50	<i>T. K. Yeoman, G. Chisham, L. J. Baddeley, R. S. Dhillon, T. J. T. Karhunen, T. R. Robinson, A. Senior, and D. M. Wright</i>	Assessing the accuracy of the new Chisham et al. SuperDARN virtual height model in Mapping ionospheric backscatter
13:50-14:10	<i>A. V. Koustov, J.-P. St-Maurice, G.J. Sofko, D. Andre, J. W. McDougall, M. R. Hairston, R. A. Fiori, and</i>	Three way validation of Rankin velocity measurements: Saskatoon radar, Resolute CADI and DMSP

	<i>E.E. Kadochnikov</i>	
14:10-14:30	<i>P. V. Ponomarenko, J.-P. St-Maurice, and C. L. Waters</i>	Effects of non-unity refractive index on SuperDARN velocity estimates
14:30-14:50	<i>R. Gillies, G. Hussey, G. Sofko, J.-P. St-Maurice, and P. Ponomarenko</i>	Estimating index of refraction in the scattering region using SuperDARN angle of arrival measurements
14:50-15:20		Tea-break
15:20-15:40	<i>J. Spaleta, W. Bristow, R. T. Parris, M. Balaji, and S. Watari</i>	Enhanced Line of Sight Velocity Analysis Using an Aperiodic Pulse Sequence on the Kodiak and King Salmon Radars.
15:40-16:00	<i>A. S. Yukimatu, K. Nishimura, Y. Ogawa, M. Tsutsumi, N. Sato, M. Rietveld, D. M. Wright, T. K. Yeoman, T. Robinson, and M. Lester</i>	Range imaging by single pulse FDI - heater induced FAI observed by SuperDARN and EISCAT
16:00-16:20	<i>J. D. Borderick and T. K. Yeoman</i>	Double Pulse Operations with SuperDARN
16:20-16:40	<i>E. Mravlag</i>	An Investigation of the Noise as Recorded by the SANA E SHARE Radar
16:40-17:00	<i>G. Chisham, M. P. Freeman, and G. A. Abel</i>	Statistical field-aligned current maps determined from SuperDARN HF radar measurements of ionospheric vorticity
17:00-19:00	Dinner (own arrangement)	
19:00-21:00	Workgroup/PI meetings	

Tuesday 03 June

03 Special Convenor: K. Baker

09:00-09:20	<i>C. Hanuise</i>	Early Years of HF radars studies of the ionosphere
09:20-09:40	<i>R. A. Greenwald</i>	Memories of Jean-Paul Villain and his contributions to SuperDARN, STARE, and ionospheric radar research
09:40-10:00	<i>M. Lester and S. Milan</i>	Observations of E-region scatter with the Iceland SuperDARN radars
10:00-10:20	<i>J.-P. St-Maurice</i>	Jean-Paul Villain's impact on my SuperDARN related research.

10:20-10:50 Tea-break

04 Polar cap/auroral processes Convenor: M. Sciffer

- 10:50-11:10 *A. Grocott, M. Lester, S. E. Milan, T. K. Yeoman, M. L. Parkinson, C. R. Down, P. L. Dyson* Ionospheric convection signatures associated with magnetotail flux ropes
- 11:10-11:30 *K. Hosokawa, A. Kadokura, N. Sato, S. E. Milan, M. Lester, G. Bjornsson, and T. Saemundsson* Electric field oscillation behind pulsating aurora
- 11:30-11:50 *A. C. Kellerman and R. A. Makarevich* On the relationship between auroral absorption, electrojet currents and plasma convection
- 11:50-12:10 *G. Sofko, M. Watanabe, Xi Yan, D. Andre, J.-P. St.Maurice, K. McWilliams, A. Koustov, and G. Hussey* Polar Cap Dynamic Structure seen using full 2-radar PolarDARN Data

12:30-13:30 Transportation to Blackbutt reserve

13:30-16:30 Picnic at Blackbutt reserve (BBQ lunch, Volleyball World Cup, wildlife encounters, sunset)

16:30-17:00 Transportation to hotels

17:00-19:00 Dinner (own arrangement)

19:00-21:00 Workgroup/PI meetings

Wednesday 04 June

Invited talk

- 09:00-09:30 *Phil Wilkinson* IPS - now and in the future
(IPS Radio and Space Services, Australia)

05 Convection Convenor: M. Parkinson

- 09:30-09:50 *C. R. Down, M. L. Parkinson,* High spatial resolution observations of ionospheric

- A. Grocott, H. Ye, J. C. Devlin and P. L. Dyson* convection in the midnight sector during the growth of a geomagnetic storm
- 09:50-10:10 *K.A. McWilliams, J.B. Pfeifer, and R.L. McPherron* Characteristics of Steady Magnetospheric Convection: A SuperDARN Perspective
- 10:10-10:40 Tea-break
- 10:40-11:00 *F.D. Wilder, C.R. Clauer, and J.B.H. Baker* Reverse Convection Potential Saturation During Northward IMF

06 Sub-auroral and mid-latitude processes Convenor: F. Menk

- 11:00-11:20 *A. Koustov, N. Nishitani, Y. Ebihara, T. Kikuchi, M. R. Hairston, and D. Andre* Subauroral polarization streams: Observations with the Hokkaido and King Salmon SuperDARN radars and modeling
- 11:20-11:40 *N. Nishitani, T. Ogawa, T. Kikuchi, H. Tsutsui, and A. Ichihara* Statistical results from the 1-year observation of the Doppler velocities by the SuperDARN Hokkaido radar
- 11:40-12:00 *M. Kartalev, E. Amata, I. Coco, V. Keremidarska* Interplanetary electric field penetration to the equatorial ionosphere
- 12:00-12:20 *J. M. Ruohoniemi, R. A. Greenwald, J. B. H. Baker, R. J. Barnes, C.R. Clauer, M. Lester, E. C. Thomas, J. D. Thornhill, S. Milan, and T. K. Yeoman* First Results from the Blackstone Radar
- 12:10-13:30 Lunch-break
- 13:30-13:50 *N. Nishitani, T. Kikuchi, T. Ogawa, S. Watari, and T. Hori* SuperDARN observation of equatorward progression of dayside merging flows during a geomagnetic storm
- 13:50-14:10 *V. V. Kumar, M. L. Parkinson, P. L. Dyson and G. B Burns* Perturbations in F-region vertical drift associated with cloud-to-ground lightning strokes detected in proximity to the southern mid-latitude station at Bundoora, Australia

07 Large-scale wave-like processes Convenors: B. Fraser

- 14:10-14:30 *F. W. Menk and C. L. Waters* Properties of Ionospheric Doppler Oscillations Driven by Downgoing ULF Waves
- 14:30-14:50 *T. K. Yeoman, L. J. Baddeley, R. S. Dhillon, T. R. Robinson,* Bistatic observations of large and small scale ULF waves in SPEAR-induced HF coherent backscatter

and D. M. Wright

14:50-15:20		Tea-break
15:20-15:40	<i>J.B.H. Baker, J.M. Ruohoniemi, R.A. Greenwald, I.J. Rae, L. Kepko, M. Lester, and T.K. Yeoman</i>	Observations of Pi2 pulsations at substorm onset with the SuperDARN THEMIS mode
15:40-16:00	<i>T. Ogawa, N. Nishitani, Y. Otsuka, K. Shiokawa, and T. Tsugawa</i>	SuperDARN Hokkaido radar observations of nighttime medium-scale traveling ionospheric disturbances and sporadic E irregularities
16:00-16:20	<i>S. C. Gane, D. M. Wright, T. Raita</i>	The Effects of Pulsed Ionospheric Flows on Electromagnetic Ion Cyclotron Wave Behaviour
16:20-16:40	<i>E. R. Talaat, J. M. Ruohoniemi, and R. Greenwald</i>	Mesopause waves and tides as observed by the SuperDARN network
16:40-17:00	<i>K. J. W. Lynn</i>	Sources of ionospheric variability

Posters Convenors: P. Ponomarenko and C. Waters

17:00-18:00

<i>G. Blanchard and K. Baker</i>	Use of the Lomb Periodogram to Analyze SuperDARN Backscatter Spectrum
<i>Y. V. Bogdanova, C. J. Owen, M. W. Dunlop, J. A. Wild, J. A. Davies, A. D. Lahiff, M. G. G. T. Taylor, A. N. Fazakerley, I. Dandouras, C. M. Carr, E. A. Lucek, and H. Rème</i>	Formation of the Low-Latitude Boundary Layer and cusp under the northward IMF: simultaneous observations by Cluster and Double Star
<i>S. Cox and C. L. Waters</i>	ULF Wave Effects in Radio Astronomy
<i>E. Custovic, J. Devlin, J. Whittington, and H. Ye</i>	Analysis of Wallops Island Style Antenna for use in TIGER-3 Radar
<i>J. Devlin, J. Whittington, D. Elton, E. Custovic, and H. Ye</i>	Proposed TIGER-3 Radar Architecture
<i>A. Grocott, J.A. Wild, S.E. Milan, T.K. Yeoman</i>	The influence of magnetospheric substorms on high-latitude ionospheric convection
<i>T. A. Kane and R. A. Makarevich</i>	SuperDARN observations of storm-time plasma dynamics: Ionospheric backscatter occurrence and convection response to Storm Sudden Commencement
<i>A. Koustov, K. Hosokawa, N. Nishitani, T. Ogawa, and K. Shiokawa</i>	Rankin Inlet PolarDARN radar observations of duskward moving Sun-aligned optical forms
<i>R. A. Makarevich</i>	SuperDARN observations of high-velocity E-region echoes

<i>A. Milillo, F.M. Marcucci, and E. Amata</i>	from the eastward auroral electrojet Plasma sheet evolution following dual lobe reconnection
<i>M. J. Parsons, E. C. Thomas, and M. Lester</i>	Numerical modelling of Blackstone radar antenna array
<i>P. Sutcliffe</i>	Observations of Pc3 band pulsations in the polar cusp region by CHAMP
<i>J.A. Wild, E.E. Woodfield, M. Lester, E. Donovan, and E.C. Thomas</i>	First results from the Rainbow auroral imager at Pykkvibaer, Iceland

18:00-... Dinner (own arrangement)

Thursday 05 June

Invited talk

09:00-09:30 *Iain Reid* (The University of Adelaide) Recent Improvements in Radar Techniques for Investigating the Atmosphere

08 Small-scale plasma turbulence and multi-scale processes Convenor: R. Makarevich

09:30-09:50 *G. Chisham, M. P. Freeman, and G. A. Abel* The non-Gaussian nature of ionospheric vorticity fluctuations

09:50-10:10 *M. L. Parkinson* Solar cycle variability in solar wind turbulence, magnetospheric currents, and ionospheric electric fields

10:10-10:40 Tea-break

10:40-11:00 *G. A. Abel, M. P. Freeman, and G. Chisham* Multi-fractal turbulence in the ionosphere - IMF clock angle control of intermittency

11:00-11:20 *B. A. Carter and R. A. Makarevich* E-region decameter-scale plasma waves observed by the dual TIGER HF radars

11:20-11:40 *H. Vickers, T. Robinson, R. Dhillon* Temperature Dependence of Artificial Field-Aligned Irregularities

11:40-12:00 *J.D. Gorin, A.V. Koustov* E region echo velocity and ExB as inferred from Stokkseyri observations

12:30-13:30 Lunch

13:30 Sharp! Bus departs for the excursion (Mt Sugar Loaf, wine-tasting at McGuigan Estate)

18:30 – 21:00 Conference dinner at Hope Estate, Pokolbin

22:30-23:00 Returning to hotels

Friday 06 June

09 Reconnection, substorms Convenor: S. Morley

- 09:00-09:20 *R. A. Greenwald, J. M. Ruohoniemi, J. B. Baker, and M. Lester* Substorm impacts on inner magnetosphere convection
- 09:20-09:40 *R. C. Fear, S. E. Milan, E. A. Lucek, and A. N. Fazakerley* Cluster and SuperDARN observations of flux transfer events from the Cluster 10,000 km season
- 09:40-10:00 *D. Ambrosino, E. Amata, F.M. Marcucci, and I. Coco* Comparison of SuperDARN observations with ionospheric projection of the reconnection line as calculated through the Cooling model.
- 10:00-10:20 *Q.-H. Zhang, H. Q. Hu, R. Y. Liu, M. W. Dunlop, and M. Lester* Simultaneous tracking of reconnected flux tubes: Cluster and conjugate SuperDARN observations on 1 April 2004
- 10:20-10:50 Tea-break
- 10:50-11:10 *J.A. Wild and A. Grocott* The influence of magnetospheric substorms on SuperDARN radar backscatter

10 Workgroup reports Convenor: C. Waters

- 11:10-11:20 *G. Chisham and T.K. Yeoman* Scheduling working group report
- 11:20-11:30 *D. Andre and R. Barnes* Data Distribution Report
- 11:30-12:00 – workshop's wrap-up (*M. Lester, C. Waters, C. Hanuise*)