

SIXTH INTERNATIONAL SYMPOSIUM ON HYDROLOGICAL
APPLICATIONS OF WEATHER RADAR

SUCCESS STORIES IN RADAR HYDROLOGY

PROGRAMME

MELBOURNE, AUSTRALIA

2-4 FEBRUARY 2004

RYDGES HOTEL
186 EXHIBITION STREET
MELBOURNE

MONDAY 2 FEBRUARY 2004

09:00 Opening Session (Chair: Alan Seed)

Dr Alan Seed
Dr Geoff Love
The Hon Dr Sharman Stone MP

Bureau of Meteorology, Chair: Local Organising Committee
Director of Meteorology, Bureau of Meteorology
Parliamentary Secretary to the Minister for the Environment and Heritage

Applications (Chair: Alan Seed)

- 09:30 **Dong-Jun Seo** (Keynote) Quantitative Precipitation Estimation (QPE) Using NEXRAD for Operational Hydrologic Forecasting and Beyond – Successes and Progress in the First Decade and Challenges Ahead
- 10:15 **Moore Bob** Weather radar for flood forecasting: some UK experiences
- 10:30 **Sempere Torres Daniel** Can we play hydrology with radars?

10:45 **REFRESHMENTS**

- 11:15 **Pegram Geoff** National flood nowcasting system towards an integrated mitigation strategy in South Africa
- 11:30 **Collier Chris** Assessing errors in urban drainage system model output flows driven by radar and other rainfall data
- 11:45 **Awan Shaukat Ali** Use of rain forecast in hydrological applications
- 12:00 **Corral Carles** An integrated tool to support flood warning decision making in Catalunya (Spain)
- 12:15 **Yoon Kanghoon** The study on Korean hydrological radar network design for flood warning and monitoring system
- 12:30 **Yang Dawen** Application of weather radar observation for flood forecast and control in the upper Tone river of Japan

12:45 **LUNCH**

- 13:30 **Poster Session 1** **Lead Authors:** Berenguer, Borga, Ciach, Fox, Gabella, Gray, Jensen, Khatibi, D-I Lee,(3 posters), G-W Lee, Nakagawa, Nishiyama, Schuster, Semsar Yazdi, Sempere Torres, Suzuki, Szturc, Wakimitzu
- 14:15 **Yu Bofu** Integration of weather radar data into a raster GIS framework for improved flood estimation

Networks and Operations (Chair: Alan Seed)

- 14:30 **Fabry Frédéric** Obstacles to the greater use of weather radar information
- 14:45 **Kitchen Malcolm** Sustaining investment in radar data processing
(Presenter: Alison Smith)
- 15:00 **Xu Qin** Progress in radar data quality control and assimilation

Quantitative Precipitation Measurement (Chair: Chris Collier)

- 15:15 **Krajewski Witold** Towards operational probabilistic quantitative precipitation estimation using weather radar
- 15:30 **May Peter** The move to quantitative radar measurement in the Australian Bureau of Meteorology

15:45 **REFRESHMENTS**

- 16:15 **Kouwen Nicholas** Operational issues: real-time correction of radar data
(Presenter: Isztar Zawadzki)
- 16:30 **Yu Bofu** Calibration of weather radars in southeast Queensland
- 16:45 **Calheiros Roberto** Cell detection at far ranges supporting Tb-Z relationships
- 17:00 **Chumchean Siriluk** Real-time radar rainfall estimates
- 17:15 **Kimura Yuki** The use of radar rainfall data in relation to topography
- 17:30 *Discussion* *Dong-Jun Seo and Paul Kucera*

17:45 **END**

18:00 **RECEPTION**

TUESDAY 3 FEBRUARY 2004

- 09:00: **Sinclair** Scott
(Presenter: Geoff Pegram) Combining radar and rain gauge rainfall estimates for flood forecasting in South Africa
- 09:15 **Rico-Ramirez** Miguel Correction for the bright band enhancement using dual-polarisation scanning weather radar measurements for real-time operation
- 09:30 **Velasco** Carlos
(Presenter: Daniel Sempere-Torres) Merging radar – rain gauge data to estimate rainfall fields: An improved geostatistical approach using non-parametric spatial models
- 09:45 **Shutov** Vladimir Adjustment and special processing of the radar precipitation data as applied to engineering hydrology

Quantitative Precipitation Forecasting (Chair: Frédéric Fabry)

- 10:00 **Jim Wilson** (Keynote) Quantitative precipitation nowcasting

10:45 REFRESHMENTS

- 11:15 **Pierce** Clive Use of a stochastic precipitation nowcasting scheme for fluvial flood forecasting and warning
- 11:30 **Boudevillain** Brice
Presenter: Hervé Andrieu) Evaluation of a VIL-based very short-term rainfall forecasting model with actual radar data
- 11:45 **Bowler** Neill
(Presenter: Clive Pierce) A probabilistic precipitation nowcast scheme designed to account for uncertainties in advection velocity and development
- 12:00 **Collier** Chris On the impact of assimilating Doppler radar wind data into an operational numerical weather prediction model
- 12:15 **Fox** Neil Providing distributed forecasts of precipitation using a Bayesian nowcast scheme
- 12:30 **Gray** Warren Nowcasting for New Zealand

12:45 LUNCH

- 13:30 **Lin** Charles Precipitation forecast based on numerical weather prediction models and radar nowcasting methods
- 13:45 **Moszkowicz** Stanislaw Verification of NWP model rain evolution using radar data and its application to the rainfall nowcasting
- 14:00 **Seed** Alan Use of radar rainfall estimates to evaluate mesoscale model forecasts of convective rainfall
- 14:15 **Takada** Nozomu The development of short-term rainfall prediction system in mountainous region by the combination of extrapolation model and meso-scale atmospheric model

Hydrometeorology (Chair: Daniel Sempere-Torres)

- 14:30 **Austin** Geoff Small mobile X band radars in small hilly catchments: field experiences
- 14:45 **Delrieu** Guy Cevennes-Vivarais Mediterranean hydro-meteorological observatory: the catastrophic rain event of 8-9 September 2002 in the Gard area

15:00 REFRESHMENTS

- 15:30 **Gebremichael** Mekonnen
(Presenter: Witold Krajewski) Assessment of the statistical characterization of small-scale rainfall variability from radar
- 15:45 **Kruger** Anton
(Presenter: Witold Krajewski) A comprehensive data analysis from two vertically pointing radars
- 16:00 **Morin** Efrat Spatial patterns in thunderstorm rainfall events: conceptual modelling and hydrological insights
- 16:15 **Nicol** John Radar observation of intense rain events during the Bollene-2002 experiment
- 16:30 *Discussion* *Jim Wilson and Neil Fox*

17:00 END

17:15 DINNER

All Posters from Session 1 are to be removed by 1:00 pm – Tuesday

WEDNESDAY 4 FEBRUARY 2004

- 09:00 **Ogden Fred** The use of high resolution radar- rainfall estimates to identify runoff processes, thresholds, and space-time variability at the continental scale
- 09:15 **Chandrasekar V.** Distributed collaborative adaptive sensing, an end to end engineered system for flood monitoring and forecasting

Errors in Radar Measurements (Chair: Guy Delrieu)

- 09:30 **Isztar Zawadzki** (Keynote) The error structure of radar precipitation maps
- 10:15 **REFRESHMENTS**
- 10:45 **Amitai Eyal** Accuracy verification of space and ground-based radar estimates of rain rate
- 11:00 **Nazirov Alex** The use of meteorological radio-locating polarimeters
- 11:15 **Ciach Grzegorz Jan** (Presenter: Witold Krajewski) Empirical modelling of the uncertainties in radar rainfall estimates
- 11:30 **Gosset Marielle** (Presenter: John Nicol) The development of a weather radar signal simulator to revisit the problem of signal statistics and measurement errors.
- 11:45 **Lee GyuWon** Errors in rain measurement by radar due to variability of drop size distributions
- 12:00 **Ruiz-Columbie Arquimedes** Radar uncertainties in cell-based TITAN Analyses
- 12:15 **Anagnostou Marios** (Presenter: Witold Krajewski) Experimental investigation of an X-band polarimetric algorithm for attenuation correction and microphysical retrievals

12:30 LUNCH

- 13:15 **Poster Session 2** **Lead Authors:** Amiryazdani (2 posters), Boudevillain, Francisco de Oliveria, Germann, Hui, Kucera, Nagata, Ote, Pano, Weipert, Zawadzki, Zhao

Dual Polarisation Techniques (Chair: Geoff Austin)

- 14:00 **Chandrasekar V.** Dual polarization radar estimates of rainfall: recent advances
- 14:15 **Jordan Phillip** Hydrological evaluation of single and dual polarisation radar rainfall measurement algorithms
- 14:30 **Keenan Tom** Characteristics of rain drop oblateness revealed by videosonde measurements
- 14:45 **Maki Masayuki** Observation of rainfall distribution over mountainous and metropolitan areas by X-band multi-parameter radar

15:00 REFRESHMENTS

- 15:30 **Park S.G.** Correction of radar reflectivity and differential reflectivity for rain attenuation and estimation of rainfall at X-band wavelength
- 15:45 **Ryzhkov Alexander** Measurements of rain with a polarimetric WSR-88D radar operational demonstration
- 16:00 **Lee GyuWon** Sources of errors in precipitation measurements by polarimetric radar
- 16:15 *Discussion* *Isztar Zawadzki and Phillip Jordan*

16:45 Concluding Remarks – Geoff Austin: Chair Scientific Committee