

The Third International Conference on Fog, Fog Collection and Dew

11 – 15 October 2004

Commodore Hotel, Waterfront, Cape Town, South Africa

A WORD OF WELCOMRE

This is the third international conference that addresses research on Fog, and the first conference where Dew research is included. These conferences provide unique opportunities for scientists from all over the world to share their knowledge and achievements in Fog and Dew research. Scientists are brought together as a research community for the application of their findings to supply drinking water to many rural communities. For the first time the conference is hosted in Cape Town, where one of the first known attempts to collect fog water was undertaken on Table Mountain. I would like to express a warm welcome to all the delegates, and believe that you will be enriched by this visit to Cape Town.

Hannes Rautenbach
Conference Chair
October 2004

CONFERENCE ORGANIZING COMMITTEE

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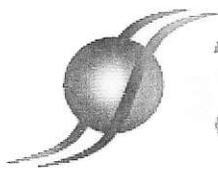
Cover page photos (from top to bottom) : 1) Dew and fog collectors in Holland. 2) Fog at the village of Assaga in Majz district, Yemen 3) A fog collection screen in the Limpopo Province of South Africa. 4) Dew on a leaf wetness sensor. 5) Dew condensers in Corsica. 6) A pilot project fog screen along the west coast of southern Africa.

CONFERENCE SCIENTIFIC COMMITTEE

On behalf of the International Scientific Steering Committee, I am pleased to welcome all participants of the 3rd Fog Conference. Founded by Bob Schemenauer in 1998, it has – as we in Germany say – become a tradition, when it occurs more than twice. In that sense, I wish the Fog Conference a long tradition. Fog, an atmospheric transient status of water, is important for many reasons. In the previous Conferences we have learned more about the role of fog in atmospheric chemistry and air pollution, as well as in water supply. Water surely is the key environmental factor of this century. Consequently, this topic plays a major role during our Conference. Some of the leading scientists meet here, in wonderful Cape Town, to present and discuss newest results. I'm sure that we will make further progress in better understanding, describing and managing fog processes.

Detlev Möller: *Chairperson: Scientific Committee*

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The Third International Conference on Fog, Fog Collection and Dew

CONFERENCE PROGRAMME

SUNDAY, 10 OCTOBER 2004		
14:00 – 17:00	Registration	
18:00 – 20:00	Icebreaker at the Commodore Hotel	
MONDAY, 11 OCTOBER 2004		
REGISTRATION AND OPENING		
08:00 – 09:00	Registration	
09:00 – 09:15	The Honorable <u>Ms. M.P. Sonjica</u> Minister of Water Affairs and Forestry, South Africa	
09:15 – 09:45	<u>Mike Muller</u> : South African Water Resources Director General of the Department of Water Affairs and Forestry, South Africa	
09:45 – 10:15	<u>Dr Robert Schemenauer</u> : Water for Arid Lands: Fog and Dew Fog Quest, Canada	
10:15 – 10:30	<u>Prof Detlev Möller</u> : Chair of the Conference Scientific Committee, Germany	
10:30 – 11:30	TEA BREAK AND MEDIA INTERVIEWS	
SESSION A: WATER MANAGEMENT AND FOG WATER RESOURCES		
Session Chair: Johan van Heerden		
11:30 – 11:50	An Investigation of Renewable Water Sources in the Kingdom of Saudi Arabia (<u>H.I. Abualhamayel</u> and <u>P. Gandhidasan</u>)	A1
11:50 – 12:10	Experiments Conducted in Cape Verde. Constraints on Fog Collection Development Projects (<u>António A. Sabino</u>)	A2
12:10 – 12:30	Evaluation And Quantification Of The Hydrological Potential Of The Fog At The Ipuana'S Hill, Guajira Desert, Colombia, South America. (<u>García Adolfo León</u> and <u>Arango Maria Cecilia</u>)	A3
12:30 – 13:30	LUNCH	
SESSION B: WATER MANAGEMENT AND FOG WATER RESOURCES (continue)		
Session Chair: Pablo Osses		
13:30 – 13:50	Investigation of the suitability of adopting Passive Humidity Harvest as an alternative water resource in Palestine (<u>Rabi Ayman</u>)	B1
13:50 – 14:10	Spatial and temporal distribution of fog and its harvesting potential over northern India (<u>Bhupender Singh</u> , <u>Anubha Kaushik</u> and <u>H.N. Dutta</u>)	B2
14:10 – 14:30	Variations of Fog in the Los Angeles Basin (<u>Michael R. Witiw</u>)	B3
14:30 – 14:50	Synoptic classification of rain bearing cloud systems over the Tshanowa fog collection site in South Africa (<u>Hannes Rautenbach</u>)	B4
14:50 – 15:20	TEA BREAK	

SESSION C: FOG - EARTH SYSTEMS		
Session Chair: Maria Marzol		
15:20 – 15:40	Interannual variability of marine fog over the summertime North Pacific and its relation to the ocean-atmosphere interaction (Okabe Masayo and Tachibana Yoshihiro)	C1
15:40 – 16:00	Geographical and Archaeological interpretation of Cultural Artifacts found within the limits of a Fog-Site at Alto Patache, South of Iquique, Chile. (H.Larrain, M.Aguilar, P.Cereceda, P.Osses, Farías M. and Pérez L.)	C2
16:00 – 16:20	Dominant Factors of Fog Characteristics in Mt. Oyama, Japan (Manabu Igawa, Tomoharu Takeda, Kiyoshi Matsumoto and Hiroshi Okochi)	C3
16:20 – 16:40	Global distribution of inversion layers and their relation to marine fog (Yoshinori Kamata, Kohei Suzuki, Masayo Okabe, Yoshihiro Tachibana and Shin-ya Ogino)	C4
16:40 – 16:50	DISCUSSION	
TUESDAY, 12 OCTOBER 2004		
REGISTRATION AND KEYNOTE PRESENTATION		
08:00 – 09:00	Registration	
09:00 – 09:30	Keynote presentation: Developing frontiers in dew research (Simon Berkowicz)	
SESSION D: FOG - EARTH SYSTEMS (continue)		
Session Chair: Manabu Igawa		
09:30 – 09:50	Atmosphere-ocean mixed-layer structures associated with marine fog based on observations in the Okhotsk Sea (Tachibana Yoshihiro, Ogawa Hiroko, Shiohara Mayumi, Iwamoto Katsushi, Takeuchi Kensuke and Wakatsuchi Masaaki)	D1
09:50 – 10:10	Temporal Dynamics of Dew and Fog Events and Their Impact on Wheat Productivity in Semi-Arid Region of India (Surender Singh, Ram Singh and V.U.M. Rao)	D2
10:10 – 10:40	TEA BREAK	
SESSION E: DEW		
Session Chair: Adrie Jacobs		
10:40 – 11:00	Application of a Load Cell for use as a Weighing Micro-lysimeter to Measure Dew (B. G. Heusinkveld, S. M. Berkowicz, A. F. G. Jacobs and W. Hillen)	E1
11:00 – 11:20	Comparison of Dew yields in Four Mediterranean sites: Similarities and Differences (M. Mileta, M. Muselli, D. Beysens, I. Milimouk, S. M. Berkowicz, B. G. Heusinkveld and A. F. G. Jacobs)	E2
11:20 – 11:40	Is dew water potable? Physical, Chemical and Biological Characteristics of Dew on Atlantic Coast (Bordeaux, France), Mediterranean Coast (Zadar, Croatia) and Mediterranean Island (Ajaccio, Corsica Island, France) (D.Beysens, M.Muselli, M.Mileta, I.Milimouk, C.Ohayon and E.Soyeux)	E3

11:40 – 12:00	Urban dew collection under semi-arid conditions: Jerusalem S.M. Berkowicz, D. Beysens, I. Milimouk, B.G. Heusinkveld, M. Muselli, E. Wakshal and A.F.G. Jacobs	E4
12:00 – 13:00	LUNCH	
SESSION F: DEW (continue)		
Session Chair: Simon Berkowicz		
13:00 – 13:20	Enhanced dissolution of volatile organic compounds into urban dew water collected in Yokohama, Japan (Okochi Hiroshi, Kataniwa Masanori, Sugimoto Daisuke, Takeuchi Masaki and Igawa Manabu)	F1
13:20 – 13:40	Dew and Fog Collection in a Grassland Area, The Netherlands (A. F.G. Jacobs, B. G. Heusinkveld and S. M. Berkowicz)	F2
13:40 – 14:00	Mulching as a means of dewfall exploitation for arid agriculture? (Alexander Graf, Wilhelm Kuttler and Julius Werner)	F3
14:00 – 14:30	TEA BREAK	
SESSION G: FOG MONITORING AND MODELING		
Session Chair: Michael Witiw		
14:30 – 14:50	Fog forecasting for Melbourne Airport (Peter Newham)	G1
14:50 – 15:10	New perspectives in remote sensing of fog and low stratus – TERRA/AQUA-MODIS and MSG (J. Bendix, J. Cermak and B. Thies)	G2
15:10 – 15:30	The main results of a European research project: "Improvement of transport safety by control of fog production in a chamber" ("FOG") (Philippe Andre, Silva Cleide Aparecida, Elena Balocco, Jean-Jacques Boreux, Viola Cavallo, Michèle Colomb, Jocelyne Dore, Joseph Dufour, Jules Hannay, Khaled Hirech, Nick Kelly, Patrick Lacôte and Laurent Mealares)	G3
15:30 – 15:50	Innovative artificial fog production device, a technical facility for research activities (M. Colomb, K. Hirech, P. Morange, J.J. Boreux, P. Lacôte and J. Dufour)	G4
15:50 – 16:10	An Economical Optical Fog Detector (Jacqueline H. Carrillo Scott E. Emert, Eli D. Sherman and Jeffrey L. Collett, Jr.)	G5
16:10 – 17:30	TEA BREAK AND POSTER VIEWING	
SESSION H: POSTER SESSION		
Low Clouds At Mt. Schmücke (Germany): Physical Characterisation (Wolfgang Wieprecht, Karin Acker, Stefan Mertes, Dieter Kalass and Detlev Möller)		H1
Wet, throughfall, fog and cloud water deposition of sulphur and nitrogen in Červenohorské sedlo (Hrubý Jeseník Mountains, Czech Republic) (Miloš Zapletal, David Kuňák, Petr Chroust)		H2
Time variations of Fog during summer in the Canary Islands (M. Marzol and G. Garcia-Santos)		H3
Results From Fog Water Collection On Mt Velebit In Croatia (Mileta Marina)		H4

Canopy Throughfall Under <i>Sophora denudata</i> Trees In a Reunion Upper-Montane Forest (Gabriel Gérald , Jauze Laurent)	H5	
Analysis Of Fog Events At São Paulo Metropolitan Area And Surroundings (F.L.T. Gonçalves and G.P. Fernandes)	H6	
Gradients of fog and rain in a tropical montane cloud forest of southern Ecuador and its chemical (J. Bendix, P. Fabian and R. Rollenbeck)	H7	
Statistical Characteristics of Number of Fog Days per Year in Georgia (A.G. Amiranashvili, V.A. Amiranashvili and K.A. Tavartkiladze)	H8	
Testing Fog Collectors in the Namib Desert (Olavi Makuti, Joh R. Henschel, Hartmut Kolb, Vilho P. Mtuleni, Veronica Siteketa and E.S. Shanyengana)	H9	
Analysis of Some Reasons of Variations of Number of Fog Days per Year in Georgia (A.G. Amiranashvili, V.A. Amiranashvili and K.A. Tavartkiladze)	H10	
Dew In Island, Coastal and Alpine Areas (I. Milimouk, D. Beysens, M. Muselli, V. Nikolayev and R. Narhe)	H11	
Comparative Dew yields from two large Planar Dew Condensers (M. Muselli, D. Beysens and I Milimouk)	H12	
Trials and tribulations with fog systems in the Eastern Cape Province of South Africa (Johan van Heerden)	H13	
Chemical Composition of Fog/Cloud and Rain Water in the Beskydy Mountains – Czech Republic (Marie Skybova)	H14	
WEDNESDAY, 13 OCTOBER 2004		
CONFERENCE EXCURSION African Welcome Safaris (tours@africanwelcome.com)		
THURSDAY, 14 OCTOBER 2004		
REGISTRATION AND KEYNOTE PRESENTATION		
08:00 – 09:00	Registration	
09:00 – 09:30	Keynote presentation: First Approximation of the Ecophysiology of Fog and Dew – A Tribute to Gideon Louw (Joh R. Henschel and Mary K. Seely)	
SESSION I: CHEMICAL AND PHYSICAL FOG CHARACTERISTICS Session Chair: Detlev Möller		
09:30 – 09:50	Low Clouds At Mt. Schmücke (Germany): Chemical Characterisation (Karin Acker, Wolfgang Wieprecht, Erika Brüggemann, Dieter Kalass and Detlev Möller)	I1
09:50 – 10:10	Marine versus continental influence on fogwater chemistry at the eastern Andes cordillera (Eva Beiderwieden, Thomas Wrzesinsky and Otto Klemm)	I2
10:10 – 10:30	Time and Space Variability of the Occult Precipitation in the Selected Mountainous and Urban Areas of the Czech Republic (Miraslav Tesar, Jaroslav Fisak, Miloslav Sir and Daniela Fottova)	I3
10:30 – 11:00	TEA BREAK	

SESSION J: CHEMICAL AND PHYSICAL FOG CHARACTERISTICS (continue)		
Session Chair: Daniel Beysens		
11:00 – 11:20	The Organic Composition of California Fogs (Jeffrey L. Collett, Jr., Pierre Herckes, Taehyoung Lee, Hui Chang and Sarah Youngster)	J1
11:20 – 11:40	Changes of cloud water chemical composition in the Western Sudety Mts., Poland (Marek Błaś, Mieczysław Sobik and Ryszard Twarowski)	J2
11:40 – 12:00	In Situ Heterogeneous Oxidation of SO ₂ in Fog and Cloud Drops (Liaquat Husain)	J3
12:00 – 13:00	LUNCH	
SESSION K: PHYSICAL AND CHEMICAL FOG CHARACTERISTICS (continue)		
Session Chair: Jeff Collett		
13:00 – 13:20	Comparison of pollutant concentrations in solid and liquid deposited precipitations at the Milesovka Mt. (J. Fisak, M. Tesar, D. Rezacova, D. Fottova)	K1
13:20 – 13:40	Difference in fog and stratus formation on the North and South coasts of Brazil (Natalia Fedorova and Vladimir Levit)	K2
13:40 – 14:00	Optical Attenuation in Fog at a Wavelength of 1550 nanometers (Michael R. Witiw, Ken W. Fischer, Eric Eisenberg and Robert Pierce)	K3
14:00 – 14:20	On the Determination of Drizzle Inhomogeneous Concentration Zones During Simultaneous Fog Events (F. García-García and G. Montero-Martínez)	K4
14:20 – 14:50	TEA BREAK	
SESSION L: PHYSICAL AND CHEMICAL FOG CHARACTERISTICS (continue)		
Session Chair: Robert Schemenauer		
14:50 – 15:10	Seasonal Variations of Carbonaceous Aerosols over an urban environment in India (K. Madhavi Latha and K.V.S. Badarinath)	L1
15:10 – 15:30	Understanding of fog structure, development and forecasting, COST722 <i>EU</i> (COST722 member states, presented by J. Bendix) <i>Fac. Geography Univ. Marburg</i>	L2
15:30 – 15:40	DISCUSSION	
DINNER		
19:00 – 23:00	CONFERENCE BANQUET IN THE COMMODORE HOTEL Guest of honour: Councillor <u>Saleem Mowzer</u> (Mayoral Committee Member for Trading Services, City of Cape Town)	
FRIDAY, 15 OCTOBER 2004		
REGISTRATION AND KEYNOTE PRESENTATION		
08:00 – 09:00	Registration	
09:00 – 09:30	Keynote presentation: A multidisciplinary project in fog oases in the Coastal Atacama Desert (Pilar Cereceda Troncoso)	

SESSION M: FOG WATER COLLECTION		
Session Chair: Pilar Cereceda Troncosos		
09:30 – 09:50	Fog Collection Evaluation in the Sadaa Governorate, Yemen (Pablo Osses, Robert S. Schemenauer and Matthias Leibbrand)	M1
09:50 – 10:10	Fog Collection in a Region of the Western Mediterranean Basin: Evaluation of the use of Fog Water for the Restoration of Wildfire Burnt Areas (María J. Estrela, José A. Valiente, David Corell and M. Millán Millán)	M2
10:10 – 10:30	Extreme events of clouds stratus in the North of Brazil (Natalia Fedorova, Helber Barros Gomes and Vladimir Levit)	M3
10:30 – 11:00	TEA BREAK	
SESSION N: FOG WATER COLLECTION (continue)		
Session Chair: Joh Henschel		
11:00 – 11:20	Guatemala Fog Collection Project, 2004 (Juan Luis García, Robert S. Schemenauer, Melissa Rosato and Pablo Osses)	N1
11:20 – 11:40	Fog Collection Evaluation and Operational Projects in the Hajja Governorate, Yemen (Robert S. Schemenauer, Pablo Osses and Matthias Leibbrand)	N2
11:40 – 12:40	LUNCH	
CONFERENCE CLOSURE		
12:40 – 13:40	GENERAL MEETING	
13:40	CLOSURE	

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