

MEETING PROCEEDINGS

A hard copy of these abstracts was distributed to the meeting participants but you may purchase one for \$25.00 US by contacting:

Office of International Affairs
Texas Tech University
P. O. Box 41036
Lubbock, TX 79409-1036

Table of Contents

Use your internet browser's find feature, located under the edit menu, to search by title or author.

[Click here to download entire book.](#) (Requires [Adobe Acrobat Reader](#))

1. Fundamental Processes

[Scaling Effects of Standing Crop Residues on Aerodynamic Transfer Processes](#)

R. M. Aiken, D. C. Nielsen, and L. R. Ahuja

[Estimation of PM20 Emissions by Wind Erosion: Main Sources of Uncertainties](#)

Stephane C. Alfaro and Jean Louis Rajot

[Analysis of Velocity Profiles from Wind Tunnel Experiments with Saltation](#)

B.O Bauer, C. A. Houser, and W.G. Nickling

[Aeolian Abrasion and Fine Particle Production from Red Sands: An Experimental Study.](#)

J.E. Bullard, G.H. McTainsh, and C. Pudmenzky

[A Physical-Conceptual Model to Predict the Threshold Shear Velocity of Wet Sediment](#)

W.M. Cornelis, D. Gabriels, R. Hartmann

[Aerodynamic Roughness and Displacement Height Prediction for Waves](#)

M. M. Darwish and J. M. Gregory

[Wind-driven Rainsplash Erosion](#)

G. Erpul, L. D. Norton, and D. Gabriels

[Wind Tunnel and Field Investigation of Flow Dynamics Within and Around a Valley](#)

Brian Garvey, Giles F.S. Wiggs, Ian P. Castro, and Joanna E. Bullard

[The Long-distance "Transportable Fraction" of the Vertical Flux of Wind-transported Dust](#)

Dale Gillette

[Evidence for Direct Suspension of Loessial Soils](#)

Jim Kjelgaard, David Chandler, and Keith Saxton

[Shrub Spacing and Surface Shear Stress Distributions: A Wind Tunnel Study](#)

Jeffrey A. Lee and Ronald Greeley

[Wind Tunnel Simulation Experiment on the Erodibility of the Fixed Aeolian Sandy Soil by Wind](#)

Xiao-Yan Li, Jia-Hua Wang, and Lian-You Liu

[Sidewall Effects of Wind Tunnel on Aeolian Sediment Transport](#)

Z. S. Li and J. R. Ni

[Mechanics of Crust Rupture and Erosion](#)

Cheryl McKenna Neuman and Ann Rice

[Scaling of Surface Wind Speed](#)

Thomas M. Over and Paolo D'Odorico

[Preliminary Laboratory Studies of Shear Stress Partitioning](#)

Keld R. Rasmussen

[On the Rate of Aeolian Sand Transport](#)

Michael Sorensen

[Flattened Residue Effects on Wind Speed and Sediment transport](#)

Geert Sterk

[Interactions Between Turbulent Wind Flow and Saltation Sand Transport](#)

Geert Sterk, John van Boxel, Rosaline Zuurbier

[The Dynamic Effects of Moisture on the Entrainment and Transport of Sand by Wind](#)

G.F.S.Wiggs, R.J. Atherton, and A.J. Baird

[The Formation and Stability of Surface Armoring by Coarse Sand Particles](#)

Yu Yi, Okumura Takenobu, Sueyasu Katsumi, and Kamichika Makio

2. Instrumentation/Measurement in the Field and Lab

[KISR Long Atmospheric Boundary Layer Wind Tunnel](#)

W. Al-Nassar, S. Alhajraf, M. Al-Sudirawi and G. Joseph Keld R. Rasmussen

[Clay and Carbonate Effect on Fine Dust Emissions Measured in a Rotating-Tube Dust Generation System](#)

A. Amante-Orozco and T. M. Zobeck

[Clay and Carbonate Effect on Fine Dust Emissions as Generated in a Wind Tunnel](#)

A. Amante-Orozco and T. M. Zobeck

[Evaluation of Saltation Flux Impact Responders \(Safires\) for Measuring Instantaneous Aeolian Sand Transport Rates](#)

Andreas C.W. Baas

[Measurement PM_{2.5} Emission Potential from Soil Using the UC Davis Resuspension Test Chamber.](#)

O. F. Carvacho, L. L. Ashbaugh, M.S. Brown and R.G. Flocchini

[Characterising Soil Surface Susceptibility to Wind Erosion Using Bi-directional Reflectance: A](#)

[Preliminary Assessment.](#)

A. Chappell and G. Sheridan

[Use of Landsat Thematic Mapper Multi-temporal Images to Detect and Study Vegetation Dynamics in the Mojave Desert: Applications to Studies of Dust Emission](#)

Pat S. Chavez, Jr., Miguel G. Velasco, David J. Mackinnon, Kathryn A. Thomas, and Robert Fulton

[Use of Satellite and Ground-based Images to Monitor Dust Storms and Map Landscape Vulnerability to Wind Erosion](#)

Pat S. Chavez, Jr., David J. Mackinnon, Richard L. Reynolds, and Miguel G. Velasco

[Mapping Surface Armoring of Arid and Semi-arid Environments Using Remotely Sensed Images](#)

Pat S. Chavez, Jr., David J. Mackinnon, and Miguel G. Velasco

[WITSEG Sampler: A Segmented Sand Sampler for Wind Tunnel Test](#)

Zhibao Dong and Hongyi Sun

[A 200-m Tall Instrumented Tower for Atmospheric Measurements in Wind Events](#)

Thomas E. Gill, Douglas A. Smith, Russell R. Carter and Richard E. Peterson

[Temperature Sensitivity of a Piezo-Electric Sensor Used for Wind Erosion Measurements](#)

S. K. Heidenreich, J. F. Leys, G. H. McTainsh, and F. J. Larney

[Simulated Atmospheric Vortex Threshold](#)

James D. Iversen

[Simulating the Martian Environment](#)

K.M.Kinch, J.P.Merrison, D.M.Grant, T.L.Jacobsen and K. R. Rasmussen

[Relative Dust Emission Estimated From A Mini-Wind Tunnel](#)

J. F. Leys, C. Strong, G .H. McTainsh, S. Heidenreich, O. Pitts and P. French

[Measured and Modeled Roughness Heights \(Z0\) Over Diverse Roughness Elements, Central Mojave Desert, California, USA](#)

D.J. MacKinnon, G. D. Clow, R. K. Tigges, R.L. Reynolds and P.S. Chavez, Jr

[Extraction of the Geometry of Surface Clasts from Ground-based Digital Images: Application to Studies of Wind Erosion](#)

D.J. MacKinnon and P.S. Chavez, Jr

[Preliminary Results of the ADEC First IOP in April 2002](#)

Dr. Mikami Masao

[The Role of Instrumentation in Aeolian Research; Recent Advances and Future Challenges](#)

Cheryl McKenna Neuman and William G. Nickling

[Sonic Anemometers in Aeolian Sediment Transport Research](#)

J.H. van Boxel, G. Sterk and S.M. Arens

[A Wind Tunnel Study of the Collection Efficiency of an Aerodynamically Improved 'Frisbee' Dust Trap](#)

G.F.S. Wiggs, J. Leys, G. H. McTainsh, S. Heidenreich, C. Strong

[Application of Caesium-137 Technique on Wind Erosion in Gonghe Basin, Qinghai Province.](#)

[China.](#)

P. Yan, P. J. Shi and G. R. Dong

3. Field Studies

[Natural Sources of Aeolian Dust in Amman, and Selected Areas of Jordan](#)

Hadeel Al Dwaikat, Ian Foster, Nasfat Hunjul , Adrian Wood and Joan Lees

[Man and Dust--A Unique Perspective from Southeastern New Mexico/West Texas](#)

Richard Arimoto, Sondra Sage, Cheryl Schloesslin, Thomas Kirchner, Joel Webb, Barry Stewart, David Schoep and MarkWalthall

[A Comparison of Wind and Water Erosion Rates Among Grassland, Shrubland, and Forest Ecosystems](#)

D. D. Breshears, J. J. Whicker, J.E. Pinder, and M. P. Johansen

[Simulations to Optimise Sampling of Aeolian Sediment Transport in Space and Time for Mapping](#)

A. Chappell, G. McTainsh, Craig Strong and John Leys

[The Incidence of Wind Erosion as Related to Soil Properties and Geomorphic History in South-western Australia](#)

R.J. Harper, R.J. Gilkes, M. Hill and D.J. Carter

[Intensive Study Site for Monitoring, Measuring and Modeling Agricultural Field Dust Emissions](#)

Jim Kjelgaard, Keith Saxton, Brian Lamb and Candis Claiborne

[Wind Erosion in Voivodina](#)

Lj. Letic and R. Savic

[Testing of Regional Wind Erosion Models For Environmental Auditing](#)

J. F. Leys, G .H. McTainsh, Y. Shao and K. Tews

[Field Studies of Wind Erosion Intensity and its Variability Under Different Vegetated Sandy Grasslands, Inner Mongolia](#)

Feng-Rui Li, Hua Zhang, Tong-Hui Zhang and Yu-Lin Li

[Wind Erosion in Marginal Mediterranean Dryland Areas, Khanasser Valley- A Case Study](#)

Z. Massri, M. Zöbisch, A. Bruggeman, P. Hayek and M. Kardous

[Wind Erodibility of Arid Lands in the Channel Country of Western Queensland, Australia: A Sequel \(1994-2000\)](#)

G.H. McTainsh, B.M. Love, JF Leys and C. Strong

[Effect of Surface Conditions on PM10 Dust Emissions, Owens Lake, CA](#)

W.G. Nickling and L.J. Brown

[Wind Erosion in a Small Catchment of Grazing Area in Northern Burkina Faso: Influence of Surface Features](#)

J.L. Rajot, O. Ribolzi and J.P. Thiebaut

[The Yellow Lake experiment](#)

J.E. Stout

[Particle-size Characteristics of Wind Eroded Sediments from Disturbed Biotic Crusts in South East Australia](#)

Craig Strong, John Leys and Grant McTainsh

[Soil Roughness Degradation and Crop Residue Decomposition: Measurement and Simulation](#)

S. J. van Donk and E. L. Skidmore

[Measurement and Data Analysis Methods for Field-Scale Wind Erosion Studies](#)

Ted M. Zobeck, John E. Stout, R. Scott van Pelt, Roger Funk, Jean Louis Rajot, and Geert Sterk

4. Modeling

[Numerical Simulation of Sand and Snow Drift at Porous Fences](#)

S. Alhajraf

[Forecasting Dust Storms using CARMA-Dust Model and MM5 Weather Data](#)

B. H. Barnum, N. S. Winstead, P. Colarco, O. B. Toon, P. Ginoux, J. Wesely and Lt. Amy Hakola

[Dust Generation Modeling - Source Terms and Microscale Transport from Military Installations](#)

Ronald Cionco and Donald Hoock

[Wind Erosion Risk Assessment of Alberta Soils](#)

G. M. Coen, J. Tatarko, T. C. Martin, K. Cannon, T. W. Goddard, and N. J. Sweetland

[Stochastic Multivariate Analysis of Hydrometeorological Variables for Wind Erosion Models](#)

Paolo D'Odorico, Thomas M. Over and JaeChan Yoo

[Commonality in Process Based Erosion Models, Obstacles and Opportunities](#)

Fred A. Fox Jr

[Comparison of Wind Erosion Measurements in Germany with Simulated Soil Losses by WEPS](#)

R. Funk, E. L. Skidmore and L. J. Hagen

[Modeling of Wind-blown Dust Emissions at Owens \(dry\) Lake, CA](#)

Dale Gillette, Duane Ono and Kenneth Richmond

[Long-term Simulation of Dust Distribution with the GOCART Model: Correlation with the North Atlantic Oscillation](#)

Paul Ginoux, Joe Prospero and Omar Torres

[Prediction Success with Integrated, Process-Based Wind-Erosion Model](#)

J. M. Gregory and M. M. Darwish

[Validation of WEPS Erosion Predictions for Single Wind Events](#)

L.J. Hagen

[Spatially Explicit Regional Wind Erosion and Dust Emission Modeling: Incorporating Large and Small-scale Variability](#)

G. S. Okin and D. A. Gillette

[Time-averaged Numerical Modelling of Airflow over an Idealised Transverse Dune](#)

D.R. Parsons, G.F.S. Wiggs, I. J. Walker, B.G.Garvey and R.I. Ferguson

[Self-limiting Blowing Dust Mechanism](#)

R.E. Peterson

[Representation of Land-Surface Processes in Models of Wind Erosion](#)

Michael R Raupach and Hua Lu

[Numerical Simulation of Drag Partition over Rough Surfaces](#)

Yaping Shao and An Li

[Numerical Simulation of Northeast Asian Dust Storms Using an Integrated Wind Erosion Modelling System](#)

Yaping Shao

[Using WEPS with Measured Data](#)

John Tatarko and Larry Wagner

[Emission of Soil Dust Aerosol: Anthropogenic Contribution and Future Changes](#)

Ina Tegen, S.P. Harrison, K.E. Kohfeld, S. Engelstaedter and M.Werner

[Validation of the Wind Erosion Equation \(WEQ\) for Discrete Periods](#)

R. S. Van Pelt and T. M. Zobeck

[Validation of the Wind Erosion Stochastic Simulator \(WESS\) and the Revised Wind Erosion Equation \(RWEQ\) for Single Events](#)

R. Scott Van Pelt, Ted M. Zobeck, Ken N. Potter, John E. Stout and Thomas W. Popham

[Wind Erosion Modelling in a Sahelian Environment](#)

Saskia M. Visser, Geert Sterk Judith J.J.C. Snepvangers

[Overview and Current Status of WEPS 1.0](#)

L. E. Wagner

[Simulated Global Atmospheric Dust Distribution: Sensitivity to Regional Topography, Geomorphology, and Hydrology](#)

Charles S. Zender and David J. Newman

5. Environmental Impacts and Erosion Control

[Partially Closed Aeolian/Alluvial Sedimentary Systems on Mojave Desert Alluvial Fans](#)

C.T. Baldwin, R. Rush and J. Brint

[Modelling to Reconstruct Recent Wind Erosion History of Fields in Eastern England.](#)

A.Chappell and A. D. Thomas

[The Causes and Processes of Sandy Desertification of Typical Region in North China](#)

Duan Zhenghu, Xiao Honglang and Wang Gang

[Chemical Contaminants, Globally Transported Dust and Downstream Ecosystems](#)

V. H. Garrison, W. Foreman, M. Majewski, C. Holmes, E.A. Shinn, D.Griffin, C. Kellogg, R. Smith and M. Ranneberger

[Aeolian Dust Captured on Isolated Surfaces along a Transect from the Mojave Desert to the](#)

[Colorado Plateau, USA.](#)

Harland Goldstein, M. Reheis, R. Reynolds, J. Yount, K. Simmons, P. Lamothe and F. Luisze

[How Wind Erosion Processes Affect Selection and Performance of Erosion Control Systems](#)

L. J. Hagen

[Trace Elements Deposited with Dusts in Southwestern U.S. --Enrichments, Fluxes, Comparison with Records from Elsewhere](#)

Todd K. Hinkley, Paul J. Lamothe, Gregory P. Meeker, Xiao Jiang, Mark E. Miller and Robert Fulton

[Regional Evaluation of Wind Erosion from Loess Lands: A Case Study of Pengyang County, Ningxia, China](#)

Yubao Li, E. L. Skidmore and Baoping Sun

[Transport and Dispersion of Blowing Dust in the Mexico Basin](#)

M. T. Lopez, R. Villasenor, A.I. Quintanar and V. Mora

[Aeolian Processes in Old and New Industrialized Areas \(A Case Study of Silesian Upland-Southern Poland\)](#)

J. Pelka-Gosciniak, J. Wach and T. Szczypek

[The PM10 and PM2.5 Dust Generation Potential of Soils/Sediments in the Southern Aral Sea Basin, Uzbekistan](#)

A. Singer, T. Zobeck, L. Poberezsky and E. Argaman

[Sediment Deposition in an Attic Near a Region of Dust Provenance: Implications for Historic Regional Dust Dispersion and Deposition Patterns](#)

R. Scott Van Pelt, Ted M. Zobeck and Thomas H. Gill

[High-resolution Stable Isotope Geochemistry of Aeolian Dust from Owens Lake, California](#)

Russell T. Winn, Thomas E. Gill and Haraldur R. Karlsson

[Sources of Wind-blown Dust in Northern China: Towards Developing an Asian Dust Databank](#)

Jie Xuan and Irina N. Sokolik

[Changes of Soil Environment and their Effect on Crop Productivity in Desertification Processes of Sandy Cropland](#)

Zhao Halin, Zhang Tonghui, Zhao Xueyong and Cui Jianyuan

6. Landforms and Aeolian Paleoenvironments

[Natural Sources of Aeolian Dust in Amman, and Selected Areas of Jordan.](#)

Hadeel Al Dwaikat, Ian Foster, Nasfat Hunjul, Adrian Wood and Joan Lees

[Migration of Parabolic Dunes at Aberffraw on the Island of Anglesey, North Wales](#)

S.D. Bailey and C.S. Bristow

[Linear Dune Development Along Flood-eroded Desert Margins in Central Australia.](#)

Mary C. Bourke

[Optical Dating Chronologies of Dune Reactivation in the South-eastern Arabian Peninsula](#)

Helen Bray and Stephen Stokes

[Origin of Iowa's Sand Prairies](#)

Steven H. Emerman, Brian R. Depew and Lisa K. Anderson

[Aeolian Influences on the Soils and Landforms in Semi-arid South-western Australia](#)

R.J. Harper and R.J. Gilkes

[Trace Elements Deposited with Dusts in Southwestern U.S. -Enrichments, Fluxes, Comparison with Records from Elsewhere](#)

Todd K. Hinkley, Paul J. Lamothe, Gregory P. Meeker, Xiao Jiang, Mark E. Miller and Robert Fulton

[Factors Affecting Sand Dune Mobility on the Navajo Nation, Arizona, USA](#)

M.M. Hiza

[Wind-Strength Variations Inferred from Quartz Grain-Size Trends in the Lower Cutler Beds Loessite \(Pennsylvanian-Permian, Utah, U.S.A.\)](#)

N. Hoang, M.J. Soreghan and G.S. Soreghan

[Climate Change in the 21st Century and the Impact on Dunefield Mobility in the Kalahari](#)

M. Knight, D.S.G Thomas and G.F.S Wiggs

[Subarctic Aeolian Reactivity in Northern Finnish Lapland : A 10 ka Year Record](#)

Mia M. Kotilainen

[Linear Dunes in the Western Sahara, Mauritania: Chronology and Reconstruction of Late Pleistocene and Holocene Wind Regimes](#)

Nicholas Lancaster, Gary Kocurek, Ashok Singhvi, V. Pandey, Max Deynoux, Jean-Francois Ghienne and Khalido Lô

[Eolian Deflation of Holocene Playas and Formation of the White Sands Dune Field.](#)

Richard P. Langford

[Wind-Strength Variations Inferred from Quartz Grain-Size Trends in the Maroon Formation Loessite \(Pennsylvanian-Permian, Colorado, U.S.A.\)](#)

K.M. Moreland, M.J. Soreghan and G.S. Soreghan

[The Concept of Mineralogical Maturity and the Origin and Evolution of Dune Fields in the Western United States](#)

Daniel R. Muhs

[Cenozoic Soil Sequences and Paleoenvironments of West Texas, USA](#)

C.G. Olson, S. M. Casby-Horton, B.L. Allen, M.A. Cano-Garcia

[Spatial Variability of Aeolian Sandson Starczynow "Desert" \(Eastern Part of Silesian Upland\)](#)

J. Pelka-Gosciniak

[The Developmental Significance of Dune Morphology in the Prairie Provinces of Canada](#)

Z.K. Pfeiffer and S.A. Wolfe

[Late Quaternary Eolian History of the Needles Area of Canyonlands National Park, Utah: Dunes and Dust](#)

Marith Reheis, Richard Reynolds, James Yount, Helen Roberts, Harland Goldstein, Yarrow Axford, Nancy Shearin

[Optical Dating Chronologies of Dune Reactivation in the South-eastern Arabian Peninsula](#)

Stephen Stokes and Richard Bailey

[Aeolian Geomorphology of the Salt Basin, West Texas](#)

V.P. Tchakerian, P.R. Rindfleisch, J. Given and D.E. Wilkins

[Climatic Factors Affecting Mobility and Stability of Sand Dunes](#)

H. Tsoar

7. Dunes and Related Landforms

[Development and Morphology of Falling Dunes, Northeast Kuwait](#)

A. Al-Enezi, K.Pye and R. Misak

[Remobilisation of a Parabolic Dune in Kennemerland, the Netherlands](#)

S.M. Arens, Q. Slings and C.N de Vries

[Patterns of Airflow in Namib Interdunes: Their Characteristics and Significance](#)

M.C. Baddock, I. Livingstone and G.F.S. Wiggs

[Combining Ground Penetrating Radar \(GPR\) Surveys and Luminescence \(OSL\) Dating to Determine Dune Migration](#)

C.S. Bristow, S.D. Bailey, G.A.T. Duller and A.G. Wintle

[Movement of a Small Slipfaceless Dune in Namibia](#)

C.S. Bristow and N. Lancaster

[Evolution of Fertility and Configuration of Aeolian Soils in the Processes of Shifting Sand Fixation in Tengger Desert](#)

Duan Zhenghu, Xiao Honglang and Wang Gang

[Network Dunes in Southeastern Tengger Deseert: Morphology, Sediment, and Dynamics](#)

Ha Si

[Exceptionally Coarse-grained Wind Ripples in the Wright Valley, Antarctica](#)

Nicholas Lancaster, William G. Nickling and John A. Gillies

[Dune Sand Transport as Influenced by Direction, Magnitude and Frequency of the Erosive Winds, Ordos Plateau, China](#)

L.Y. Liu, E. Skidmore, L. Wagner and J. Tatarko

[Toward a Genetic Classification of Aeolian Sand Dunes](#)

Kevin R. Mulligan and Vatche P. Tchakerian

[Numerical Modelling of Flow Structures Over Transverse Aeolian Dunes](#)

D.R. Parsons, G.F.S. Wiggs and I.J. Walker

[The Effect of Vegetation Increase on the Morphology and Dynamics of the Israeli Coastal Dunes](#)

H. Tsoar and D. G. Blumberg

[Advances in Research on Dune-airflow-sand Transport Dynamics: Incorporating Secondary Flow and Sand Transport Processes](#)

J. Walker

[Late Holocene Episodic Aeolian Activity and Landscape Development in the Cimarron River Valley; Western Oklahoma](#)

K. Lepper and G.F. Scott

[The Simulation of Dust Storm in China](#)

Song Zhenxin