

ISSI Workshop on "Dust Devils" 16-20 February 2015

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MONDAY 16 February, 2015

Notice: All presentations are 30' slots including time for questions

09:00-09:20 Registration in ISSI Hallerstrasse 6, 1st floor

09:20-09:30 Welcome and Introducing to ISSI and Workshops

J. Zarnecki

Introduction

Chairman: John Zarnecki

09:30-09:45 Goal of the workshop

Conveners

09:45-10:00 Dust devils on Earth and Mars

Matt Balme

Session 1 Observations and measurements

Chairman: Matt Balme

10:00-10:30 Remote sensing of active dust devils

Dennis Reiss

10:30-11:00 Coffee break

11:00-11:30 Observing Dust Devils in Volcanic Landscapes

Patrick Whelley

11:30-12:00 Spectral measurements of dust devils

Manish Patel

12:00-12:30 Seeing the unseen: using dust devils to probe the structure of the convective boundary layer

Lori Fenton

12:30-14:00 Lunch

14:00-14:30 Observations and analysis of dust devils from landed Mars missions

Mark Lemmon

14:30-15:00 Comparison of convective vortex signatures at multiple martian surface locations

Jim Murphy

15:00-15:30 Detections of Thermal Convective Vortices at Gale Crater, Mars, with MSL

Kathryn Steakley

15:30-16:00 Coffee break

16:00-16:30 Convective vortices and dust devils observed by REMS/MSL

Henrik Kahanpää

16:30-17:00 Statistics of Dust Devils in Field Measurements and Models

Ralph Lorenz

17:00 Welcome reception

TUESDAY 17 February, 2015

Chairman: Ralph Lorenz

09:00-09:30	The InSight mission and the seismic signature of dust devils	Naomi Murdoch
09:30-10:00	Field study of dust devil acoustics	Jim Murphy
10:00-10:30	Dust emission on Earth: what are the main processes?	Béatrice Marticorena

10:30-11:00 *Coffee break*

11:00-11:30	Formation of dust devil tracks on Earth and Mars	Dennis Reiss
11:30-12:00	Quantifying global dust devil occurrence from meteorological analyses	Peter Knippertz
12:00-12:30	Discussion, Observations and measurements	

12:30-14:00 *Lunch*

Session 2 *Laboratory experiments*

Chairman: Lynn Neakrase

14:00-14:30	Laboratory Dust Devils: ASUVG Past, Present, and Future	Lynn Neakrase
14:30-15:00	Thermal Creep Gas Flows within the Martian Soil: Experimental Studies with the JSC Mars-1A Simulant'	Thorben Kelling
15:00-15:30	Supporting aerodynamic dust lifting by insolation induced tension: Low pressure wind channel experiments with illuminated dust beds	Gerhard Wurm

15:30-16:00 *Coffee break*

16:00-16:30	Effects of dust electrification and aggregation	Jon Merrison
16:30-17:00	Laboratory examination of the electron avalanche and breakdown of the martian atmosphere	Bill Farrell, given by Mike Zimmerman
17:00-17:30	Discussion, Laboratory experiments	

WEDNESDAY 18 February, 2015

Session 3

Electric fields

Chairman: John Zarnecki

09:00-09:30	Charging of atmospheric particles: theory and observations	Giles Harrison
09:30-10:00	Electric Field Generation in Martian Dust Devil Simulations	Erika Barth
10:00-10:30	Modeling and simulation of electrification of dust particles and their movements in wind field of dust devil	Zhaolin Gu
<i>10:30-11:00 Coffee break</i>		
11:00-11:30	Micro-ARES on DREAMS/ExoMars 2016: a first attempt to characterize the dust-induced electric environment of Mars	Franck Montmessin
11:30-12:00	Dust lifting process - results from a field test campaign in the Sahara desert	Francesca Esposito
12:00-12:30	Conception of dust-devil-like whirlwind for wind energy utilization	Zhaolin Gu
12:30-13:00	Discussion, Electric fields	
<i>13:00-14:30 Lunch</i>		
14:30-19:00	Free time to visit the attractions of Bern Also: All ISSI facilities are available for small group discussions	
19:00	Workshop dinner at restaurant “Kornhauskeller” at Kornhausplatz 18, Bern	

THURSDAY 19 February, 2015

Session 4 Modeling

Chairman: Aymeric Spiga

09:00-09:30	Numerical experiments on the formation and evolution of dust devils and tornadoes	Tetsuya Takemi
09:30-10:00	Scaling debris-laden tornado corner flow dynamics to dust devils	Mike Zimmerman
10:00-10:30	Dynamical and statistical modeling of dust devils	Michael Kurgansky
<i>10:30-11:00</i>	<i>Coffee break</i>	
11:00-11:30	Numerical study on dust devils in idealised convective mixed layers	Junishi Ito
11:30-12:00	Diurnal Convection and Dust Devils in Relation to Mesoscale Circulations	Daniel Tyler
12:00-12:30	Sensitivity of Large Eddy Simulations to Basic Model Configuration Settings	Scot Rafkin
<i>12:30-14:00</i>	<i>Lunch</i>	
14:00-14:30	Dust devil characteristics and associated dust entrainment based on large-eddy simulations	Martina Klose
14:30-15:00	Modeling boundary layer plumes and dust devils with large-eddy simulations	Aymeric Spiga
<i>15:00-15:30</i>	<i>Coffee break</i>	
15:30-16:00	The representation of dust devils in martian global climate models	Stephen Lewis
16:00-16:30	Towards a parameterisation of dust-devil effects in weather and climate models using Large-Eddy Simulations	Bradley Jemmet-Smith
16:30-17:00	Discussion, Modeling	

FRIDAY 20 February, 2015

Session 5 ISSI book

Chairman: Conveners

09:00-09:30 ISSI book

09:30-11:00 Group/splinter meetings

09:30-11:00 Coffee available

11:00-12:00 Group reports

12:00-13:00 Discussion book (authors Book plans, actions, schedule)

End of Workshop