

EGU TODAY

Daily newsletter at
the General Assembly

Daily Column

In 1665, peering through an early microscope, Van Leeuwenhoek discovered "a new world in a drop of water": microorganisms. Centuries later, we have come to expect that zooming into complex systems will reveal new worlds. But what if we zoomed and zoomed but saw only the same processes acting at smaller and smaller scales? This is Mandelbrot's self-similar scaling: a part when enlarged is similar to the whole; it is exemplified by fractal sets and isotropic turbulence.

Today, we understand self-similarity as a special case of the quite general notion of scale invariance that can apply to space, to time, to space-time. The key is to allow for anisotropy so that a part when enlarged and squashed and/or rotated – is the same as the whole. As we zoom in, the morphologies change even though the dynamics do not. Fooled by appearances, the new worlds are no more than old worlds in disguise!

Scale-invariant models of geosystems now range from atmospheric, oceanic and space plasma turbulence, to precipitation, seismic activity, topography, volcanoes and more. Even conventional numerical models of the weather and climate are accurately scale invariant over most of their ranges, so that we obtain powerful stochastic understandings of these complex deterministic models.

Don't miss today's Union session on 'Geocomplexity and scales' (US1: 08:30–12:00, Room Y1)!

Shaun Lovejoy

Nonlinear Processes in Geosciences
Division President

EGU Today helps you keep up with the many activities at the EGU General Assembly by highlighting sessions and events from the programme. If you have comments or questions, please email Bárbara Ferreira at media@egu.eu. The

EGU 2015: A Voyage through Scales

Wednesday, 15 April 2015

The day's highlights at a glance

- **08:30** – Geocomplexity and scales (US1: Room Y1) / Open session on geosciences instrumentation and methods (GI0.1: Room B11) / The impact of grazing on soil, landforms, water and biota resources (SSS9.3/BG2.15/GM4.6/HS10.13: Room B13)
- **10:30** – Climate engineering: new insights from (solar) radiation management studies (AS4.16/CL3.8: Room B10)
- **12:15** – Penck lecture (KL2: Room G2)
- **13:30** – A Voyage through Scales – archives of the continental crust (GL2: Room Y1) / Permafrost open session (CR1.1/SSS0.20: Room R13) / Geoethics for society: general aspects and case studies in geosciences (EOS8: Room R12) / Stable isotopes in the atmosphere – from vapor to precipitation (AS4.8/BG1.11/CL5.11/HS7.10: Room B12) / Achievements and perspectives in scientific ocean and continental drilling (SSP3.3.1/BG6.4/CL5.13/GMPV7.3: Room B1)
- **18:00** – EGU Award Ceremony (US0: Room R1)
- **All day** – Medal lectures (various rooms: see below) / Short courses & YS events (various rooms: see overleaf) / Meet EGU (EGU Booth)

Today's medal lectures

- Christiaan Huygens Medal Lecture by Kristine M. Larson (ML11: 09:15–10:15 / Room B11)
- Milutin Milankovic Medal Lecture by Paul Valdes (ML21: 10:30–11:30 / Room Y9)
- Beno Gutenberg Medal Lecture by Göran Ekström (ML10: 11:00–12:00 / Room G3)
- Arne Richter Award for Outstanding YS Lecture by Katrin Schroeder (ML6: 12:00–12:30 / Room Y4)
- Arne Richter Award for Outstanding YS Lecture by Jérémie Mougnot (ML8: 12:00–12:30 / Room R13)
- Alfred Wegener Medal Lecture by Sergej Zilitinkevich (ML2: 12:15–13:15 / Room Y1)
- Hannes Alfvén Medal Lecture by Robert L. Lysak (ML13: 13:30–14:30 / Room Y5)
- Lewis Fry Richardson Medal Lecture by Daniel Schertzer (ML18: 13:30–14:30 / Room B10)



EGU Award Ceremony

The EGU announced the recipients, from both European and non-European countries, of the 2015 Union medals and awards, division medals, and division outstanding young scientists awards in October. Now, these individuals, will be honoured for their important contributions to the Earth, planetary and space sciences at the EGU Award Ceremony (US0), which is taking place today from **18:00 to 19:30 in Room R1**.

A Voyage through Scales – archives of the continental crust

A lecture by Chris Hawkesworth, from the School of Earth Sciences, Bristol, UK, seeking to explore how material analysed on a wide range of scales influences how models are developed and how they may be tested. The session (GL2), for a general geoscientific audience, is taking place in **Room Y1 from 13:30 to 14:30**.

Short courses & young scientist events

- How to write a successful ERC Starting Grant proposal (SC19/TS10.1: 15:30 - 17:00 / Room B4)
- Your career 2: job applications and interviews (SC31: 17:30–19:00 / Room R4)
- Open science goes geo – part II: scientific software (SC24: 17:30–19:00 / Room B1)
- How to write a paper in geomorphology (SC47/GM11.2: 17:30–19:00 / Room G2)
- Finding funding: how to apply for a research grant (SC39: 17:30–19:00 / Room B13)
- Climate workshop for young scientists: introduction to climate modelling (SC43: 19:00–20:00 / Room B12)