



## Letter from EGU's new General Secretary

### Meet Mioara Manda

Dear EGU friends,

Since April's General Assembly, thanks to your deep confidence, expressed by your vote, I'm serving as the EGU General Secretary. You know me or maybe you don't... If I would have only one sentence to tell you about my past and current research, I should say I'm a geophysicist, mainly involved in measuring, mapping, and understanding the multitude of magnetic fields encountered in the vicinity of the Earth and Earth-like planets. Understanding our planet, from its deep interior to the nearby space, requires new geophysical measurements and new mathematical tools, to analyze and extract the crucial information from the available data. My research has been continuously influenced by these aspects, which will have an effect on my time as EGU General Secretary. And so will the fact that I have always considered scientific research an activity to be shared with others, mainly with younger scientists.

My great interest in tackling the important subjects posed by understanding the Earth's system has brought me to the EGU, which stands as an ideal environment to address important questions linked to the characterization of parameters governing the Earth's evolution. I believe that my education, my employment background and my personal interests are particularly appropriate for the role of EGU General Secretary. My professional experiences in Romania, France, and Germany, are and will be beneficial for ensuring an appropriate working frame for this new challenge. My broad and diverse range of interests is an effective contribution in developing networks and mechanisms for European and international cooperation, in order to continue to support the geosciences community, from north to south, from east to west. The position of EGU General Secretary asks for some efforts, but doing what you like is a pleasure not a chore – and I feel much enjoyment in being able to work with you and for you! To do this, your comments are continuously needed. As one of the members of the EGU Executive Board,

I aim to consider your suggestions and ideas to enhance the work of the Union.

EGU is today the result of a decade of efforts you all have put in. With its 14 Open Access journals, its topical meetings, education and outreach activities, and the new and effective Munich office staff, EGU is one of the youngest and most dynamic structures in the geo-world. Our most prominent event, the annual General Assembly, brings together you all, and now you are over 11,000 scientists. Each meeting is a joy with a lot of interesting new research being presented and discussed – every new Assembly is a new success! I am convinced that 2013 will bring us together again, this time to celebrate a remarkable decade of EGU work!

Mioara Manda  
EGU General Secretary



Mioara Manda (General Secretary) and Philippe Courtial (Executive Secretary) at the EGU booth at the 2012 Japan Geoscience Union Meeting.

## Division reports

### News brought to you from four of EGU's divisions

In each edition of GeoQ, we select several Division Presidents and Vice-Presidents to contribute reports updating members with news from, or related to the fields covered by, their divisions. Issue 3 gives voice to Stefano Tinti (NH President), Gerrit H. De Rooij (HS President), Henk Dijkstra (NP President), and Athena Coustenis (PS President) and Iannis Dandouras (PS Vice-President).

#### Natural Hazards

The Natural Hazards (NH) Division covers all the geological and geophysical processes that can be hazardous and can produce damage to the environment and to the society. Therefore it is a place where scientists and researchers of various geo-disciplines meet with sociologists, economists, and people responsible for



One year after the L'Aquila earthquake, a natural hazards that occurred in central Italy in 2009 and killed over 300 people (Image by R. Civico, distributed by EGU under a [Creative Commons licence](#))

territorial and urban defense and planning policies. The aim is to improve the understanding of the evolution of the processes and to discuss new technologies, methods and strategies to mitigate their disastrous effects. NH is structured in nine subdivisions covering specific hazards. Of these, seven are listed here: hydro-meteorological, volcanic, landslide, earthquake, sea and ocean, snow-avalanche and glacial, and wildfire hazards. The eighth subdivision covers biological and environmental hazards and, in addition, hazards not included in the previous ones. The ninth (natural hazards and society) focuses on the social aspects of the hazards, including development sustainability, emergency, warning, after-disaster resilience, and others. Most of the topics that are treated in NH are also treated in other EGU divisions, which is expected due to the intrinsic transversal nature of the NH Division. For example, earthquakes are the main interest of the Seismology Division, but they are also of interest here where the chief topics are, among others, how to evaluate vulnerability and risk, how to reduce the earthquake disastrous impact on human lives and society, how geoscientists can contribute to a prompt recovery of a community affected by earthquake sequences, and more.

Traditionally, NH is one of the strongest EGU divisions since many researchers and students share its view of a geoscience aimed at fostering the harmonized development of the human society in the natural environment. As before, in the 2012 EGU General Assembly the participation of scientists to NH initiatives was very active. The Division organized as many as 41 symposia and co-organized 13 more symposia with a total of 1,465 papers, about one third of which were given as oral presentations and the remaining as posters.

The 2012 NH Plinius Medal was awarded to [Timothy Sullivan](#) in recognition of his outstanding research achievements in seismic engineering design, seismic assessment, seismic retrofit and mitigation of seismic risk. Further, the Arne Richter Outstanding Young Scientist Award was given to a NH Division scientist, namely [Lieven Clarisse](#), for his outstanding contribution to exploiting remote atmospheric sensing techniques to improve our understanding of emission and transport processes of ash and gases in relation to various natural hazardous processes. (Note that starting from 2013 the [Plinius Medal](#) will change significantly since it transforms from a young scientist medal to a mid-career scientist medal.)

For geoscientists interested in natural hazards this is the right time to provide contributions for next year's General Assembly programme, suggesting symposia and conveners, and promoting new

ideas. The final decision on the programme will be made by the EGU Council in October.

Of interest to the NH community might be the [FP7 two-stage call for research projects](#) published on 10 July by the European Union on the theme 'Environment', more specifically on Protecting Citizens from Environmental Hazards, with deadline 16 October 2012.

The last news is that in November there will be an election for EGU Division Presidents, including NH. Proposals are to be submitted by 15 September.

*Stefano Tinti*  
NH Division President

## Hydrological Sciences

Hydrological Sciences (HS) are very much in motion. A major driver of this dynamic is the maturing development of versatile sensor networks that record multiple variables with unprecedented frequency and number of observation locations, often deploying wireless technology. Several of this year's sessions at the General Assembly demonstrated that we are witnessing the onset of the ability to monitor large hydrological systems – vegetated soil monoliths, fields, catchments, and landscapes – in real time, and in their entirety. This ability has resulted in the emergence of ambitious monitoring programmes of international significance in several countries.

[Kurt Roth](#) touched upon this unprecedented observational capability in his Dalton Medal Lecture. He noted that this development is paralleled by a still continuing increase in computational power. Numerical models will soon be capable not only of solving subsurface flow problems over areas of several square kilometres with a resolution in the order of one metre, but of running in inverse mode (requiring very many model runs). He painted a near-future prospect where the combination of large, diverse data sets and inverse modelling of models with a massive number of nodes will allow model inversion to evolve from a method to fit model parameters to a technique to test various analyzes and competing representations of subsurface processes.

A session dedicated to the hydrological use of commercial equipment and gadgets not at all designed for scientific purposes has testified to the creativity of savvy experimenters for the past two years. Darcy Medallist [Tissa Illangasekare](#) championed sophisticated experimentation to develop the process understanding necessary to comprehend what is going on in the subsurface at any relevant scale. Like Kurt Roth and the conveners who dedicated a session to large-scale hydrology, he alluded to the need to practice hydrology across a range of scales. But he also emphasized the need to integrate hydrology with other disciplines: it is not sufficient to understand flow in porous media, we also need to grasp biogeochemical processes and the couplings between the flow below and over the Earth's surface, and the atmosphere above it. The need for this coupling is reflected by the large number of sessions co-organized with such divisions as Atmospheric Sciences, Geomorphology, Soil System Sciences, and Natural Hazards.

*Gerrit H. De Rooij*  
HS Division President

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## Nonlinear Processes in Geosciences

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During the 2012 General Assembly in Vienna, 438 papers were presented within sessions for which the Nonlinear Processes in Geophysics (NP) Division was leading. New in the programme for 2012 were two Short Courses, one on Tipping Points in the Geosciences and one on Nonlinear Time Series Analysis. Both courses attracted a large audience and will again be on the NP programme for the 2013 Assembly. There was also a Townhall Meeting on the topic Complexity Education in the Geosciences, which was interesting, but unfortunately not so well attended.

One of the Union medals, the 2012 Alfred Wegener Medal, was awarded to [Michael Ghil](#) (ENS, Paris, France), an active member of the NP community, for “his leading contributions to theoretical climate dynamics, his innovative observational studies involving model assimilation of satellite data in meteorology, oceanography and space physics; the breadth of his interdisciplinary studies, including macroeconomics; and also for his extensive supervision and mentoring of scores of graduate and postdoctoral students”. Michael gave a medal lecture with the title *The Complex Physics of Climate Change and Climate Sensitivity: A Grand Unification*.

The NP Division medal, the 2012 Lewis Fry Richardson Medal, was awarded to [Harry Swinney](#) (Center for Nonlinear Dynamics University of Texas at Austin, USA) for “his pioneering experiments on deterministic chaos and highly original laboratory models of geophysical flows”. Harry gave a lecture on internal wave turning depths in the oceans.

The NP Division Outstanding Scientist Award was presented to [Claudia Cherubini](#) (Politecnico di Bari, Italy) for “valuable contributions to the hydrogeological modelling of groundwater applied to resource management, with specific approaches for coastal fractured aquifers, and for applying advanced geo-statistical techniques to model environmental and anthropogenic variables”. She gave a lecture on *Experimental Studies of Nonlinear Flow and Solute Transport Dynamics at Different Scales in a Fractured Formation*.

Apart from the Lewis Fry Richardson Medal Lecture and the NP Division Outstanding Scientist Lecture, the session (NP1.1) also included invited presentations by ‘young stars in the NP field’: Freddy Bouchet, Susana Barbosa, Ilan Koren, Ana Mancho, Themis Sapsis, Florian Sevellec, and Michel Crucifix.

On other Division news, the NP board for 2012–2014 consists of Stefano Pierini, Reik Donner, Olivier Talagrand, Mickael Chekroun, Vincent Rey, Shaun Lovejoy, Jose Redondo, Daniel Schertzer, and myself. The Lewis Fry Richardson Medal Committee for 2013 consists of Michael Ghil (chair), Harry Swinney, Katy Nicolis, Klaus Fraedrich, and Stefan Fauve.

During the NP Business Meeting at General Assembly, Roger Grimshaw gave, as executive editor, an update on the Division journal *Nonlinear Processes in Geophysics*. Its current impact factor is 1.6 and increasing! The NP Division community is encouraged to send

their best work to this journal to make it the leading journal in the field.

Finally, the autumn 2012 election for EGU Division Presidents, including NP, will take place in November. The NP Division community is encouraged to submit proposals for the next NP Division President by 15 September.

*Henk Dijkstra*  
NP Division President

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## Planetary and Solar System Sciences

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The 2012 General Assembly in Vienna was very successful for the Planetary and Solar System Sciences (PS) Division. The 27 sessions held touched all of the most interesting current science themes in our Division, through 655 papers that were presented concerning current studies from space and ground-based data, laboratory work, and modelling.

The 2012 Jean Dominique Cassini Medal was awarded (posthumously) to [Angioletta Coradini](#), an exceptional colleague, during a very emotional ceremony at the General Assembly, presided by Athena Coustenis. Jonathan Lunine and Jean-Pierre Bibring presented the personality traits of Angioletta and her outstanding contributions to the planetary sciences. The medal was received by her brother, Marcello Coradini.

At the Division level, the Bates Medal – for exceptional contributions to planetary and solar system sciences – was awarded to [Hans Rickmann](#). In addition, the PS Division, together with the Solar-Terrestrial Sciences Division, had an Arne Richter Outstanding Young Scientist Award bestowed to [Aikaterini Radioti](#).

On the science-projects news side, we are glad to announce that the Jupiter Icy Moons Explorer ([JUICE](#)) mission was recently selected by ESA for implementation. This L-class mission, planned for launch in 2022, will study in detail the environment of Jupiter and its moons, and the emergence of habitable worlds around giant gas planets. It is characterized by a 7.6 years cruise and 3.5 years of operation in the Jovian system. The call for payload proposals was released recently and is open until 15 October.

The Planetary and Solar System Science community is also excited about the Mars Science Laboratory, the most complex mission in the history of robotic exploration of Mars. The rover landed successfully on Gale Crater, Mars on August 6, 2012.

Finally, on other Division news, the autumn 2012 election for EGU Division Presidents, including PS, will take place in November. The PS community is encouraged to submit proposals for the next Division President by 15 September.

*Athena Coustenis and Iannis Dandouras*  
PS Division President and Vice-President