

15th General Assembly of WEGENER



We celebrate the 30th anniversary of the foundation of
WEGENER

1st Circular

Call for Abstracts



Bogazici University
Albert Long Hall Conference Center

Istanbul, Turkey
September 14-17, 2010



The WEGENER project aims to bring together geoscientists interested in using geodetic techniques to measure and understand the 3D surface motion in Europe and the Mediterranean. The 15th Assembly of WEGENER will provide a forum for presentation, discussion, coordination and scientific support for geoscientists interested in unravelling the kinematics and mechanisms of the broad Eurasian/African/Arabian collision zone. Contributions on new aspects arising from the new satellite missions for gravity, SAR and Laser Altimetry are welcome in particular. The meeting is organized by the Geodesy Department of Kandilli Observatory and Earthquake Research Institute (KOERI) of Bogazici University and will be held in Istanbul (2010 European Capital of Culture) at the Albert Long Hall Conference Center of Bogazici University.

The Program

Session 1

30 Years of WEGENER - The Evolution of our Knowledge about the Africa-Eurasia Plate Boundaries

The concept for the organization of WEGENER was first proposed by Peter Wilson at a meeting of the Journées Luxembourgeoises de Géodynamique held in Walferdange in December 1980 to respond with a coordinated European proposal to a NASA Announcement of Opportunity inviting participation in the Crustal Dynamics and Earthquake Research Program. The project was then established in Frankfurt in March 1981 at a meeting called by the Institut fuer Angewandte Geodaesie. WEGENER was constituted as a voluntary coordinating body with membership open to any organization and individual scientists actively engaged in research directed towards achieving a better understanding of crustal dynamics, kinematics and the processes leading to earthquakes. Since the very beginning, WEGENER had been conceived as an interdisciplinary forum. WEGENER has evolved through the past 30 years both as regards science and technology. This session, besides celebrating three decades of WEGENER activities and participants, welcomes in particular contributions addressing how and through which means the evolution of our knowledge of the Africa-Eurasia plate boundaries has been accomplished.

Session 2

Current Plate Motions, Inter- and Intraplate Deformation with a Focus on Europe, the Mediterranean, Northern Africa and the Middle East

General Session

Unravelling the geodynamic complexity of this tectonically active region calls for an integrated Earth science approach combining

processes of the Earth's interior with observations of crustal and surface deformation. For this session we invite a wide range of contributions ranging from pure (generic or applied) forward modeling studies that allow for predictions of crustal deformation associated with geodynamic processes, inverse modeling of surface deformation observations, to pure observational studies with temporary and permanent geodetic networks. Special focus will be given to active deformation and large continental faults of the eastern Mediterranean.

2.1. The Mediterranean: A Geohazards Focus Area

The Mediterranean Region is prone to the major geo-risks that threaten our societies. Earthquakes, volcanic eruptions, tsunamis and flooding are some of the events that are likely to occur in this area. This session is dedicated to the study of natural hazard mitigation based on new strategies for Earth observation and the application of geodetic techniques in this natural laboratory. In this session contributions on all topics relevant for observing, monitoring and modeling the Earth and the sea with respect to hazard mitigation are invited.

2.2. The Seismotectonics and the Earthquake Cycle of the Marmara Region

The North Anatolian Fault has been the site of numerous major earthquakes with $M_w > 7.0$, the 1939-1999 seismic sequence with westward migration along the fault being the most recently recorded. The GPS measurements since 1988 provide a unique opportunity to study and understand preseismic, coseismic and postseismic deformation of the tectonic blocks limited by the fault. The study of historical earthquakes coupled with Active tectonics and paleoseismological investigations indicate that the same pattern of earthquake sequence occurred along the fault during the 9th-10th, 13th-14th centuries and 17th centuries. However, the fault section in the Marmara Sea that did not experience a large earthquake since 1766 is related to a seismic gap. The 250-300 years recurrence of large earthquakes along the same fault segment constrains the seismic cycle and determines the central Marmara Sea seismic gap and long term slip rate along the fault rupture zone. Multidisciplinary studies of the sea morphology and fault scarps, the related shallow and deep geophysical prospecting (in 2D and 3D) and the fault-controlled Holocene sedimentary deposits have improved our understanding of the fault structure in the Marmara Sea. The session seeks for contributions in geodesy, geophysics, tectonics and seismology that include data acquisition, analysis and modeling of past and recent earthquake deformation. Presentations that address the earthquake forecast and its implications on the seismic hazard assessment are also invited in this session.

Session 3

From Kinematics to Dynamics: Implications of Global Geodetic Monitoring for Plate Dynamics and Continental Rheology

Global geodetic measurements of crustal motion, in combination with plate tectonic reconstructions and new seismic imaging that allows mapping of deep Earth structure, are providing new constraints on the dynamics of plate motions and continental rheology. The temporal and spatial character of deformation along plate boundaries, and changes in the rates and directions of relative plate motions are being investigated in light of processes along plate boundaries, including the influence of continent-continent collision, various styles of subduction, and processes within the descending lithosphere and over-riding plate (e.g., slab break-off, lithosphere delamination, etc.). For this session, we seek contributions that, 1) present observations to constrain the relationship between present-day, geodetic and long-term plate tectonic estimates of plate motions, 2) examine the relationship between changes in plate motions and changes in processes occurring along plate boundaries (including sub-lithospheric processes), and 3) modeling studies that examine the importance of various forces for driving/resisting plate motions and interactions.

Session 4

Earth Observation Systems and Reference Frames, Observation Techniques, Methods and Data Analysis

With the increased sophistication of modeling techniques, the growth of permanent GNSS tracking stations and the future availability of new satellites signals (GPS L5, GLONASS, GALILEO) our knowledge of the system Earth has improved considerably. This session invites presentations that propose methods to improve the measurement of deformations focusing on new observation techniques, the added-value of new satellite signals, advances in data modeling (e.g. ionosphere, troposphere and loading), minimization of reference frame errors, and methods to handle and better understand the positions time series of the observing stations.

Session 5

Open Session with Proposed Focus on International Organization of Geodetic Initiatives Contributing to Earth Sciences

This session welcomes all those contributions in the frame of interest of WEGENER that do not specifically address the topics of the other sessions of the program. However, in particular, we solicit presentations describing European programs/initiatives in

the field of geodesy, existing or planned for the near future, aiming at providing data, services and products that can facilitate integrated approaches to support forefront research in the domain of Earth Sciences and related to the European/African plate boundary system.

Unravelling the dynamics of planet Earth at different spatial and temporal scales, depends on our ability to link different types of geodetic, geophysical, geological observations and physical models. Measuring the motion of the Earth's surface provides new constraints on the processes driving the slow deformation of continents, the occurrence of earthquakes and the interaction between the solid Earth, the oceans, the atmosphere and continental waters. In the last decade, researchers have made significant advances towards this integration, as well as towards data availability and improvements in data quality. However, a strong effort is still needed to overcome the problems of wide and easy data access and optimal and efficient data integration.

Call for Abstracts

We would like to encourage contributions to the above program. Scientific contributions can be oral presentations or poster presentations. Please submit an abstract according to the abstract submission guidelines on the WEGENER 2010 website. Deadline for abstract submission: **June 18th, 2010**.

Proceedings

An abstract volume will be available at the conference and the papers or presentations that are made available at the conference will be published on a CD-ROM and be sent to the participants. A selection of papers will be published in a special issue of the Journal of Geodynamics by Elsevier. The selection will be based on a peer review process and authors willing to undergo this process will have to submit their papers by **November 1st, 2010**.

Travel Support for Young Scientists

To assist young scientists to present the results of their research at the meeting, a limited number of travel support awards is offered. Applicants must present results of his/her research at the meeting and must be not older than 35 years at the date of the application. Applicants are requested to send their application at least three months before the meeting to the local organizing committee. As a minimum, the application should contain: title, authors, abstract, travel budget and sources of additional funding and a letter of support by the applicant's organization.

Selection of applicants will be done by scientific committee, depending on the source of funding. Priority will be given to candidates from developing countries.

Scientific Committee

Luisa Bastos, University of Porto, Portugal
Matthias Becker, University Darmstadt, Germany
Carine Bruyninx, ROB, Brussels, Belgium
Ziyadin Cakir, Istanbul Technical University, Turkey
Semih Ergintav, TUBITAK - MRC, Turkey
Francisco Gomez, University of Missouri, USA
Mustapha Meghraoui, EOST - IPGS, France
Taoufik Mourabit, University of Tangier, Morocco
Jean-Mathieu Nocquet, Geosciences Azur, France
Haluk Ozener, Bogazici University, KOERI, Turkey
Robert Reilinger, Massachusetts Institute of Technology, USA
Wim Spakman, Utrecht University, The Netherlands
Susanna Zerbini, University of Bologna, Italy

Local Organizing Committee

Haluk Ozener, Bogazici University
Onur Gurkan, Bogazici University
Conference Secretary: Asli Dogru, Bogazici University

Relevant Dates

1st circular: January 2010
2nd circular: March 2010 (call for abstract reminder)
Deadline for early bird registration: April 16, 2010
Deadline for abstract submission: June 18, 2010
Deadline for online registration: August 6, 2010
3rd circular: August 2010 (final program)

Registration

Details will be given on the WEGENER 2010 website. We would like to encourage an early registration.

Contact

Prof. Dr. Haluk Ozener
Bogazici University, KOERI, Geodesy Department
Istanbul, Turkey
Phone: +90(216)5163264
Fax: +90(216)3320241
E-mail: wegener2010@boun.edu.tr

Conference Website

<http://www.koeri.boun.edu.tr/jeodezi/wegener2010/>