



**OFFICIAL INVITATION  
FOR  
INTERNATIONAL ASSOCIATION OF GEODESY SCIENTIFIC ASSEMBLY IN 2009  
BY  
TURKISH NATIONAL GEODESY COMMISSION**

**"GEODETIC OUTLOOKS for UNDERSTANDING EARTH"**

WE LOOK FORWARD TO WELCOMING  
SCIENTIFIC ASSEMBLY OF INTERNATIONAL ASOCIATION OF GEODESY TO  
ISTANBUL IN 2009.

**DATE**

We propose late **May**-early **June** or **September 2009** for IAG Scientific Assembly. Within the proposed periods lower cost advantages in accommodation and transportation would be available. The weather in proposed dates is also very good in Istanbul.

**VENUE**

The IAG Scientific Assembly will take place in Istanbul. Although thousands of years have passed, Istanbul still maintains its geographical importance. Today Istanbul is a huge metropolis connecting continents, cultures, religions, and being home to eleven million people, and one of the greatest business and cultural center of the region.

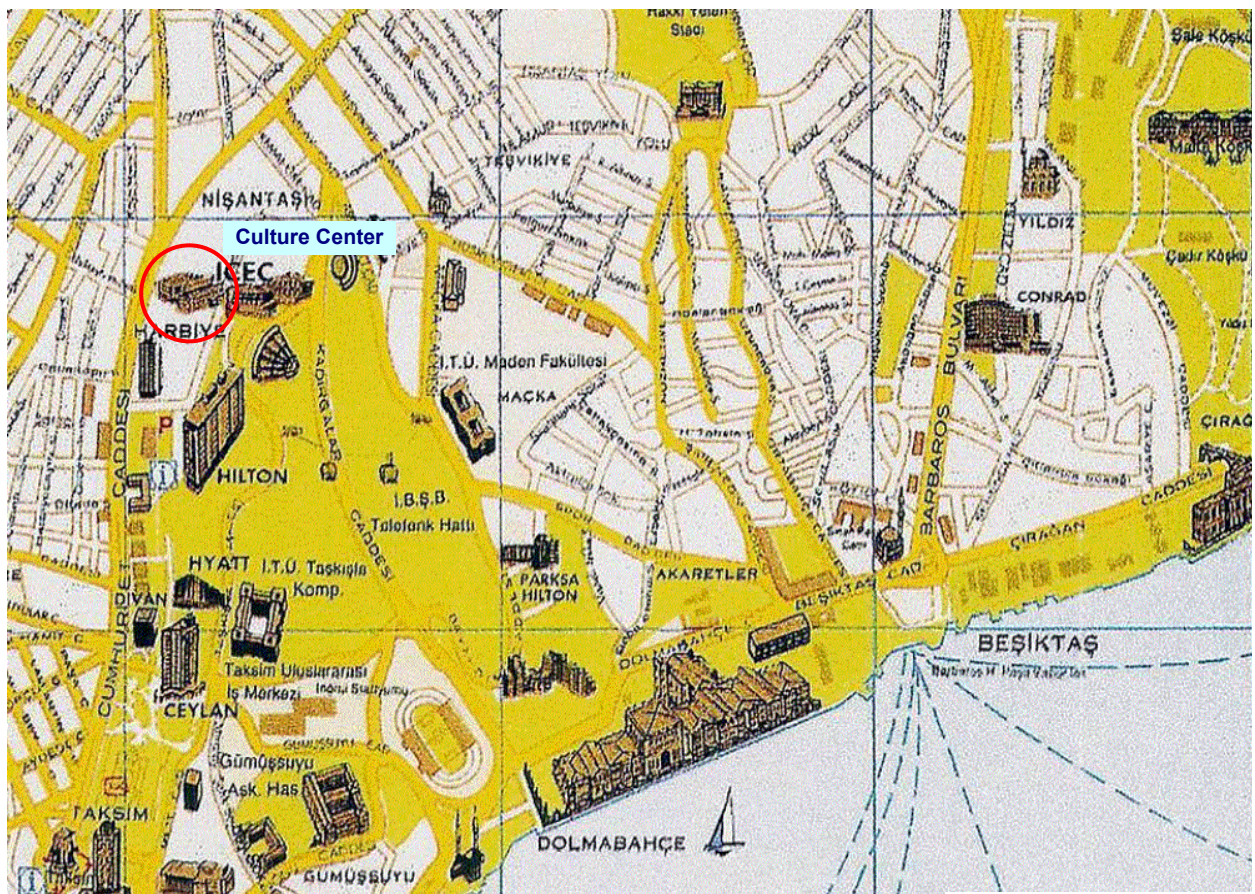
Istanbul is submitting richness of first class hotel, resort and conference facility, easily transportation to main cities of the world, beautiful decorations and unique panorama attraction. A perfect climate and less cost advantages compared to alternative destinations are added to all of these. Istanbul is an ideal destination with its being between Europe, Asia and Africa, and its exoticness. It is possible to reach Istanbul easily via Turkish Airlines or other national airlines. Daily flights are connecting Istanbul to main cities of the world.

The venue for the Scientific Assembly will be The Cultural Center of Military Museum where IGFS2006 was successfully and enjoyably organized in Harbiye, Istanbul. The Cultural Center within the constitution of the Military Museum is fully equipped to serve as a venue for cultural, scientific and arts activities. All sorts of activities such as seminars, symposia, congresses, exhibitions etc. can be held within the Cultural Center's meeting rooms and exhibition halls.





Numerous congress activities in a wide spectrum have been held in Culture Center of Military Museum. Activities held in the culture center with participation more than 500 people and a short presentation of the venue are given below.







**Overview of Military Museum and Culture Center , Harbiye / Istanbul**



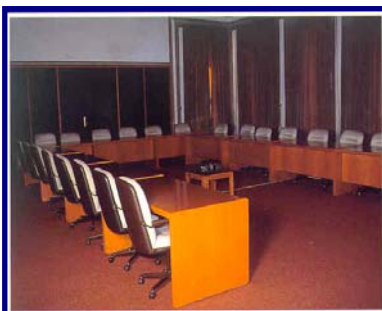
#### EXHIBITION HALL

The hall is suitable for exhibitions, auctions and similar activities. It contains hanging rails to which 100 spotlights can be attached. There are picture / painting hanging rails and 300 hanging posts and hanging apparatus.



#### CONCERT HALL

The hall has a capacity of 513 seats in amphitheatre setup. Its acoustic is suitable for activities such as congresses and conferences. There are 3 simultaneous translation cabinets and 2 backstages with 3 rooms each in addition to an extra backstage for artists. The 5 m x 9 m screen, its velvet curtain and the sliding wall system that opens to the historical garden behind the screen can be used for representation purposes.



#### RED HALL

This hall has a capacity of 40 seats in classroom setup and 80-100 seats in theatre setup. Desk can be rearranged for (U) setup or a round table setup. The room does not have a sound system. It contains a wireless simultaneous translation system with 50 headphones and 3 translation cabinets.



### CONFERENCE HALL

It has a capacity of 240 fixed seats, and contains one speaker desk and microphone, 5 microphones on the head table, 6 answering microphones on the sides and 10 protocol microphones in the front row in addition to a sound system and an adjustable lighting system. There are also 3 simultaneous translation cabinets and a simultaneous translation system with a capacity of 240 headphones.



### PARQUET HALL

It consists of two connected rooms. On default round table setup rooms A and B have capacity of 22 and 12 seats respectively. It is used for executive level meetings.



### GREEN HALL

It is a dining hall with 20 round tables and a capacity of 150 seats. Tables and chairs can be removed to arrange a cocktail setup for 400 persons (on foot) or chairs can be added to arrange a theatre set up for 300 persons and can be used as a conference hall.



### AHMET FETHI PASHA HALL

It is a two-store building consisting of two-separate halls that can be used for fairs, exhibitions and similar activities.



### GRAND FOYER

The foyer contains 9 furniture sets that can be moved on demand. It can be used for cocktails or minor desktop exhibitions.



### SQUARE FOYER

It contains 5 furniture sets by default. The furniture sets can be moved/removed on demand and the foyer can be used for minor exhibitions. It also contains a long table that can be used during coffee breaks.



### GROUND FLOOR FOYER

It is at the entrance to the cultural center. The foyer can be used for information and registration during congresses. It can also be used for opening cocktails for the activities held in exhibition hall. The foyer contains five furniture sets which can be moved/removed on demand.



### CAFÉ

This section has a capacity of 40 seats and contains a refrigerator, a dishwasher, storage shelves and washing benches. It can be used for servicing during dining and cocktails.

## **A SERIES of STAMPS**

A series of stamps will be distributed to participants as a lasting memory of the Scientific Assembly, Geodetic Science and IAG. These stamps will specifically be designed and printed only for the event. Therefore they will be a valuable collection series for world geodesist and stamp collectors.

## **LOCAL ORGANIZATION COMMITTEE (LOC)**

Turkish National Geodesy Commission will be the responsible organization for the IAG Scientific Assembly. The Local Organization Committee will be as follows.

### **Chairman of LOC,**

**Assoc. Prof. Dr. Rahmi Nurhan ÇELİK,**

Istanbul Technical University, Department of Geodesy and Photogrammetry, Istanbul.  
Representative of Chamber of Surveying Engineers of Turkey to TNGC

### **LOC Members**

**Assoc. Prof. Dr. Ali KILIÇOĞLU**

General Command of Mapping, Department of Geodesy, Ankara.  
Secretary, TNUGG

**Dr. Bahadır AKTUĞ,**

General Command of Mapping, Department of Geodesy, Ankara.  
Secretary, TNGC

**Assoc. Prof. Dr. M.Onur KARSLIOĞLU,**

Middle East Technical University, Department of Civil Engineering, Ankara.

**Dr. M. Tefik ÖZLÜDEMİR,**

**Mrs. Bihter EROL**

Istanbul Technical University, Department of Geodesy and Photogrammetry, Istanbul,

**Assoc. Prof. Dr. Haluk ÖZENER,**

**Dr. Uğur ŞANLI,**

Boğaziçi University, Kandilli Observatory and Earthquake Research Center, Geodesy Laboratory. Istanbul.

**Dr. Ugur DOĞAN**

Yıldız Technical University, Department of Geodesy and Photogrammetry, Istanbul.

**Assoc. Prof. Dr. Hakan KUTOĞLU,**

Zonguldak Karaelmas University, Department of Geodesy and Photogrammetry, Istanbul. Zonguldak.



## **SUPPORTING ORGANIZATIONS**

A number of governmental organizations, universities and local administrations support Turkish National Geodesy Commission to host IAG Scientific Assembly in Istanbul in 2009.

The supporting organizations are listed below.

### **Governmental Institutions**

Ministry of Foreign Relations

Ministry of National Defense

Ministry of Culture and Tourism

Ministry of Public Works and Settlement

TNUGG, General Command of Mapping

### **Universities in Istanbul**

Istanbul Technical University

Yıldız Technical University

Boğaziçi University

Zonguldak Karaelmas University

Kocaeli University

### **Local Administrations**

Municipality of Istanbul Greater City

Municipality of Şişli, Istanbul

### **Non-Governmental Bodies**

Chamber of Surveying and Cadastre Engineers of Turkey



## GEODESY IN TURKEY

Although the first geodetic works date back to Beyruni (973-1052), who was the first in Islamic countries to state that the earth is revolving around the sun, and on its axis, the formal and organized geodetic works began in 1895, also accepted as the date of foundation of General Command of Mapping. Turkish geodesy within the period longer than a century has taken a long distance on its way.

The period from 1895-1935 was spent to establish the organization and infrastructure including map production and education. It is widely accepted that the first scientific geodetic works began in 1935 with the establishment of the first tide gauge station in Antalya. In 1935, precise geometric leveling observations were performed to form the vertical control network. The intensive works carried out between 1935-1970 resulted in fundamental geodetic networks and sequentially series of 1/25K base maps of Turkey.

Horizontal Control Network, including first order triangulation points, was formed with the efforts during 1942-1954, and Turkish National Datum-1954 (TND-54), based on MESEDAG datum point, was established. Then TND-54 was transformed into European Datum-1950 (ED-50) by using eight co-located first order triangulation points on the western part of Turkey. Then, first order network was densified by second, third and lower order networks to be used in map production in ED-50.

The vertical control network was established by the first epoch precise leveling observations in 1935-1970, and normal orthometric heights of benchmarks were computed by adding the orthometric correction. Within this period first order gravity network consisting 24 points was established based on Potsdam Datum during 1956-1958 by using two Nörsgaard gravimeters. Then, gravity observations on leveling lines and denser regional gravity observations have continued.

In the early 70's the establishment of fundamental geodetic networks and geodesy education to meet national requirements were established in Turkey. Once fundamental networks existed maintenance, development and evaluation studies given below were achieved after 1970;

- Maintenance and development of Horizontal Control Network
- Maintenance and development of Vertical Control Network
- Determination of the Vertical Datum
- Maintenance and development of Gravity Network
- Establishment of TRANSIT-DOPPLER Network
- Determination of Turkish Geoid-1991 (TG-91)
- GPS and SLR observations
- Monitoring the crustal movements
- Geodetic Data Base

All the achievements given above have leaded Turkish Geodesists to constitute the Turkish National Fundamental GPS Network (TFGN).

Turkey, as being located in the collision zone between the African, Arabian and Eurasian plates, is subject to horizontal and vertical crustal movements, which well go

beyond the usual geodetic accuracy. Recent GPS studies have revealed large horizontal changes in site coordinates due to inter-seismic, co-seismic and post-seismic tectonic plate motions. Vertical displacements are mostly caused by co-seismic deformation, and amount to about 1-3 meters around the surface rupture. Considering the reasons stated, it is evaluated that the Turkish Horizontal Control Network does not meet the practical requirements due to horizontal and vertical movements in the active fault zones in Turkey. Actually, extensive triangulation, baseline, DOPPLER and leveling observations from 1970 to mid 1908's in order to get rid of the effect of regional and local displacements. But all those activities have not been brought to a conclusion. Nevertheless, the obtained accuracy of about 0.1-0.01 ppm from GPS surveys has caused the regional and local changes in existing Fundamental Geodetic Network sites to become more apparent, and a requirement for a new national geodetic network based on GPS technology has emerged.

The Turkish National Fundamental GPS Network 1999 (TFGN-99) with 597 stations, which meets the practical requirements, was established in 1999 by the surveys carried out 1997-1999. The catastrophic earthquakes existed after 1999 affected the TFGN sites in the earthquake areas. Consequently, TFGN was improved and updated by additional GPS, leveling and gravity observations, and called as TFGN-99A. TFGN consists of five main elements outlined below.

- GPS network having stations with coordinates based on International Terrestrial Reference Frame 1996 (ITRF96) at 1998.0.
- TFGN velocity field
- Coordinate transformation between TFGN-99A and ED-50
- National Vertical Control Network-1999A with Helmert orthometric height known at each station
- Turkish Geoid 1999A (TG-99A)

The new and current objectives of Turkish geodesy are the maintenance and development of TFGN, monitoring the crustal movements, establishment and development of Turkish Permanent GPS Array and Turkish Sea Level Monitoring Network, and finally making use of state-of-the-art terrestrial and space based geodetic techniques such as InSAR, satellite altimetry and gravity missions.

International communication in all sort and size is considered essential to reach these objectives. A number of international projects have been initiated and completed with foreign partners separately or under the umbrella of Turkish National Union of Geodesy and Geophysics. The international institutions and organizations other than governmental ones, with which TNUGG has carried out joint projects, are as follows.

- Massachusetts Institute of Technology, USA
- Federal Institute of Cartography and Geodesy, Germany
- Swiss Federal Institute of Technology, Switzerland
- Durham University, United Kingdom
- Nottingham University, United Kingdom
- Oxford University (COMET), United Kingdom
- IAG
- IGS
- FIG
- EUREF

- ESEAS
- PSMSL
- NATO G&G WG

Directing and promoting the scientific studies at the field of Geodesy, ensuring cooperation and communication among its members, organizing scientific meetings and following international developments and consequently representing Turkey; could be listed among the activities of Turkish National Geodesy Commission (TNGC).

Geodesy has not taken its place, which it deserved among earth sciences yet, and most of the earth-related phenomena have been left to concern of geology and geophysics. Science aims discovering nature and explaining natural events. Scientific information and products are adopted and promoted as long as they are about explaining natural events and facilitating the social life. For this reason; it is considered that the Turkish scientists of geodesy; along with their solely scientific aims, ought to take place in the studies which will support the social life and also do their best to avail geodesy take its respectful position among geosciences. Geology, geophysics and geodesy have close relationships in the milieu of earth research activities. For this reason International Association of Geodesy (IAG), had established a research commission of re-establishment. Having finished its studies, this commission presented its final report at IAG 2001 council meeting. The studies of the commission were found appropriate by the members of the IAG council, and it was decided that IAG will be re-organized in its new form after the general committee meeting which will be held in 2003. The changes made in the structure of IAG include innovations in scientific and technical aspects as well as in administrative ones. Along with scientific and technological developments and the social requirements having emerged after the destructive earthquakes of Düzce and Gölcük in 1999, the regulation of Turkish National Union of Geodesy and Geophysics was also changed. One of the major changes in the regulation is creating opportunities to sponsor the projects focused on earth sciences. Although these resources have not been used effectively enough so far, new arrangements for providing better support with geo scientific projects are on the way.

It has become inevitable to make dramatic changes in the structure and functioning of TNGC in parallel with national requirements and international developments. In the improvement studies resulted in the re-establishment of TNGC the following conditions have been taken into consideration;

- Ensuring a participating managerial structure for TNGC ,
- Making it more involved in national and international activities,
- Participating in the evaluation studies of sponsoring institutions for candidate geodetic research projects,
- Develop geodetic joint projects and programs,
- Obtaining and supporting to obtain data from national and international centers to be used in the projects,
- Encouraging members to publish qualified works in the international scientific journals,
- Encouraging Turkish scientists of geodesy to be organized at national levels, to take place in activities of joint projects and producing new ones,



- Providing a means to keep in touch among the members,
- Ensuring the exchange of information among the members by organizing scientific meetings.

TNGC had completed its reestablishment process in a series of meetings and prepared a new inner regulation. In TNGC's new structure; an executive committee, authorized and functioning so as to implement all sorts of organization activities of TNGC, a central bureau which will be responsible for putting the decisions of the executive committee into practice, a candidate determining commission for determining the candidates to work on the evaluation of the personnel to be employed in the organs of TNGC take place. Additionally, TNGC working groups (WG) were changed in the parallel to IAG and new working groups were formed to work as reference coordinate systems (WG1), Gravity Field (WG2), Geodynamics (WG3) and Positioning and applications (WG4).

The earthquakes are the most destructive and deforming events for the geodetic networks beside their important social consequences. Our country is a natural laboratory for the studies of crustal movements. After the earthquakes of magnitude  $M_w > 6$ , the fundamental geodetic networks should be updated and geodetic methods should be used for modelling and interpreting the movements of the crust during the earthquake together with determining velocity field of the region. Although there are three distinct disciplines in the field of geodynamic research; Geodesy, Geology and Geophysics, taking into account that the geodetic methods are indispensable and essential in terms of verification and quantification of these researches, multi-disciplinary joint earth science projects should be formed.

We hope that TNGC will be successful and reach its goals in the following terms as an appropriate scientific community in which more Turkish scientists of Geodesy will be involved.

One of the main objectives of TNGC is to encourage all Turkish geodesists to interact and carry out joint projects with international colleagues. We hope IAG 2005 Scientific Assembly in Istanbul would be a appropriate platform to gather many scientists from Turkey and to provide an opportunity for discussions.

## **FINANCIAL ISSUES**

The Local Organizing Committee proposes that the registration fees would be as follows in order the meeting will be held in comfort for all. This is an estimated value, and subject to minor changes.

### **Registration fees :**

Standard (early I)      Euro 300

Standard (early II) :   Euro 350

Standard (on site) :   Euro 400

Student(early)        :   Euro 150

Student (on site)    :   Euro 180

Accompanying per:   Euro 100

### **Registration fee for participants includes;**

- Welcoming reception
- Coffee breaks during the meeting
- Gala dinner
- Delegate's kit
- Program and Abstract Booklet
- Shuttle services (morning and evening) from the hotels on selected lines will be available

The payments should be in US dollars, as a credit card account, cash or bank transfer.

A receipt will be provided to the registered participants.

## ACCOMMODATION

Some of the hotels near to the Culture Center are given below. The hotel rates are on bed & breakfast basis and include %18 V.A.T.

### Five star hotels



*Çırağan Palace Hotel Kempinski*

	SGL room rate	DBL room rate
Ceylan Inter-Continental	292 usd	312 usd
Çırağan Palace Hotel Kempinski	410 usd	440 usd
Princess Hotel Istanbul	110 usd	120 usd
Swissotel The Bosphorus	216 usd	237 usd
The Marmara	160 usd	170 usd

### Four star hotels



*Richmond Hotel*

	SGL room rate	DBL room rate
Richmond Hotel	230 usd	260 usd
Taksim Plaza	175 usd	200 usd
Nippon Hotel	135 usd	150 usd
Elite Hotel	120 usd	140 usd
Golden Age Lion	100 usd	140 usd
Eresin Taksim	100 usd	120 usd
The Plaza Hotel	99 usd	109 usd
Mim Hotel	65 usd	85 usd
Riva Hotel	65 usd	80 usd
The Madison Hotel	55 usd	70 usd



### Three star hotels



*Golden Age 2*

	SGL room rate	DBL room rate
Golden Age 2	75 USD	95 USD
Taksim Select	60 USD	70 USD
Taşlık Hotel	40 USD	50 USD
Gezi Hotel	35 USD	50 USD

Other cheap accommodation facilities for students will be available in limited number.

### CURRENCY

The local currency is Turkish Lira (TL). The exchange rate is daily. Foreign currency can be exchanged at the airport, banks, hotels and exchange offices.

### BANKS

Bank Business hours are from Monday to Friday, 09:00-16:30. Banks are closed on Saturday, Sunday and Public Holidays. All Banks have similar exchange rates.

### RESTAURANTS

It is possible to find various kinds of Turkish, Western, Asian and all other cuisine in Istanbul.

### CLIMATE

Months	Min.	Max.
January	2	9
February	1	9
March	3	15
April	7	21
May	12	24
June	16	28
July	18	32
August	20	34
September	16	27
October	12	23
November	8	17
December	2	11

## TRANSPORTATION

### International transportation

It is possible to arrive in İstanbul with Turkish Airlines from almost every city of Europe in a few hours usually with daily direct flights. There are also direct flights between Tokyo – İstanbul and New York – İstanbul. It is also possible to arrive in İstanbul by train and by coach from most of the European Countries.

For more information contact at

Phone: +90(312) 310 6515, <http://www.tcdd.gov.tr>

Phone: +90 212 663 63 00, <http://www.turkishairlines.com>



### Transportation in İstanbul

Taxis can be found at every street corner in the city. At rush hours, a taxi is the most comfortable means of transportation. Although, taxis are expensive in comparison to other means of transportation, and cheap in comparison to other countries. The tariff increases between midnight and 6:00 am. In addition to the taxi and rental car options, you can make use of much cheaper transportation: the public bus, tramway, subway or the private system of mini-buses (dolmus) that also run in the city center. Although it runs only on limited routes, the fast tramway is a very convenient means of transport. The minibuses are much cheaper than taxis and run regular services between some neighborhoods. If you prefer the sea route instead of the Bosphorus Bridge to cross back and forth between the two sides of the city, sea buses offer a speedy service.