

# GPS Processing and Analysis using GAMIT/GLOBK

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## Overview

Global positioning system (GPS) enables high precise positioning with the help of satellite signals. Applications using GNSS signals are used not only to road, rail, air and maritime transport but also in other areas such as telecommunications, geodesy, agriculture, mineral prospecting and mining or environmental Earth observation. In recent times, GPS is extensively used to establish precise geodetic network especially for monitoring crustal movements and deformations. In the light of recent earthquake events near Indo-Eurasian plate boundary, tectonic monitoring in lesser Himalayan region is of utmost importance.

GAMIT and GLOBK form a comprehensive suite of programs for analyzing GPS measurements primarily to study crustal deformation. The software has been developed by MIT, Scripps Institution of Oceanography, and Harvard University with support from the National Science Foundation. The software may be obtained without written agreement or royalty fee by universities and government agencies for any non-commercial purposes.

<b>Modules</b>	<ol style="list-style-type: none"><li>1. Fundamentals: Coordinate, Time Systems and Structure of GAMIT/GLOBK</li><li>2. GPS observables and GPS phase data processing in GAMIT</li><li>3. GPS math models, post-processing in GLOBK: theory and solution types</li><li>4. Advanced Concepts: Error Sources and large scale processing with GLOBK and utilities</li><li>5. GPS Surveying techniques and Kinematic processing with track.</li></ol> <p><b>Dates: January 22 – January 26, 2018</b></p> <p><b>Number of participants for the course will be limited to 40</b></p>
<b>Who should attend</b>	<ul style="list-style-type: none"><li>• Executives, engineers and researchers from manufacturing, service and government organizations including R&amp;D laboratories.</li><li>• Student at all levels (B.Tech./M.Sc./M.Tech./Ph.D.) or Faculty from reputed academic and technical institutions.</li></ul>
<b>Fees</b>	<p>The participation fees for taking the course is as follows:</p> <p><b>Participants from abroad : US \$300</b></p> <p><b>Industry/ Research Organizations: INR 5,000.00</b></p> <p><b>Faculty from Academic Institutions: INR 2,000.00</b></p> <p><b>Students: INR 500.00</b></p> <p>The above fees include all instructional materials, computer usage for tutorials and assignments, and free internet facility. The participants will be provided with boarding and lodging in campus on payment basis subject to availability.</p> <p>All course registrations will processed via the national GIAN portal (<a href="http://gian.iitgp.ac.in">gian.iitgp.ac.in</a>), where a Rs. 500/- one-time fee is payable in addition to the above amount.</p> <p>Registration fee can be directly deposited through NEFT to the designated account as given below or can be sent in the form of demand draft (D.D.) drawn on any nationalized bank in favor of <b>"GIAN-GAMIT-2018"</b> payable at Allahabad.</p> <p><b>Account Name: GIAN-GAMIT-2018</b></p> <p><b>Account No. 718400301000285</b></p> <p><b>Bank: Vijaya Bank, MNNIT Branch, Allahabad-211004, UP, INDIA</b></p> <p><b>IFSC Code: VIJB0007184</b></p> <p><b>Last Date of Registration: 10 January, 2018</b></p>

## The Foreign Faculty



**Dr. Thomas Herring** is a Professor of Geophysics at MIT, USA. His research is in the applications of high precision geodetic measurement systems, primarily the Global Position System (GPS), Very Long Baseline Interferometry (VLBI), and Synthetic Aperture Radar (InSAR). These applications include deformation monitoring both globally and in selected regions around the world; studies of atmospheric water vapour; and analysis of changes in the rotation of the Earth. Herring received his Ph.D. from EAPS 1983. Following his doctorate, he spent almost seven years as a Research Associate at Harvard University. He returned to EAPS and MIT in 1989 where he has been a Professor of Geophysics since 1997.

## The Local Faculty



**Dr. Ramji Dwivedi** is Assistant Professor in the GIS Cell at Motilal Nehru National Institute of Technology, Allahabad, India. His area of research includes GNSS, Advanced SAR Interferometry (InSAR), Multi-sensor approach for natural hazard monitoring. He has published research papers in reputed international journals/conferences. He has more than 5 years of teaching and research experience. At present, he is principal investigator of DST and ISRO sponsored research projects on hazard monitoring using space and ground based geodetic techniques.

## Course Coordinator

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## Local Coordinator

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