

Dibakar Ghosal

Present Address	Permanent Address
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Research Interests

I am a geophysicist specialized in modeling and imaging of shallow subsurface structures using active source seismic data sets.

Education

- 2008–2013 Ph.D in Geophysics, *Institut de Physique du Globe de Paris (IPGP), France.*
- 2004–2006 M.Sc. in Geophysics, *Indian Institute of Technology, Kharagpur, India.*
- 2001–2004 B.Sc. in Geology, Mathematics and Physics, *Jadavpur University, India.*

Awards and Honours

CSIR NET (Lecturership examination, India) qualified.

Postdoctoral Scholarship, Uppsala University, Sweden

Research Experience

- 2014(Jun.)-2015(Dec) Postdoctoral researcher, *Uppsala University.*
Project Analysis of amplitude and frequency variation with offset on the North sea datasets.
Funded by Svenska Petroleum Exploration
- 2013 –2014 Visiting faculty, *Indian Institute of Technology Bhubaneswar, India.*
- 2013(Apr.-Jul.) Postdoctoral researcher, *Institut de Physique du Globe de Paris (IPGP), France.*
- 2008–2013 Ph.D., *Institut de Physique du Globe de Paris (IPGP), France.*
Project Shallow subsurface morphotectonics of the offshore Northern Sumatra subduction system using high resolution marine geophysical datasets.
Expertise Downward continuation, Travel time tomography of 12 km long MCS data, 2D Pre-stack depth migration, 2D Post-stack MCS data processing, Joint inversion of MCS and OBS data, MCS data interpretation, Subduction tectonics, coding using Fortran 90.

- 2007–2008
Project Research Scholar, *National Geophysical Research Institute (NGRI), India*.
Modelling the behavior of gas hydrates in Krishna-Godavari basin, India.
- 2005–2006
Project M.Sc. dissertation, *Indian Institute of Technology, Kharagpur, India*.
Evaluation of crustal structure of the central part of the Bay of Bengal by dispersion data analysis of the vertical component of surface waves (Rayleigh wave).

Teaching Experience

- 2016 Geophysical Methods at IIT Kanpur
- 2016 Mathematics for Earth Sciences at IIT Kanpur
- 2016 Special topics in Earth Sciences at IIT Kanpur
- 2013 ‘Geophysical techniques’, ‘Rock Mechanics’ and ‘Understanding the Earth system’ to c Master students at IIT Bhubaneswar.

Mentoring Experience

- 2011–2012 Responsible for multi-channel seismic data processing for Master students, IPG Paris.

Industry Experience

- 2006–2007 Project Engineer, *Wipro Technologies* (IT industry).

Sponsored Projects

- Shallow subsurface seismic imaging of NE Himalayan foothills near Shillong plateau (funded by IIT Kanpur - 25 lakhs).
- Modeling of Gas hydrate reservoir using integrated techniques (approved by ONGC as PI).

Submitted Research Proposals

- Tsunamigenesis from Andaman-Sumatra System (TASSS): Geological, Seismological and Geodynamical constraints (submitted to MOES as a co-PI).
- Delineation of shallow subsurface morphotectonics below the Central seismic gap - Himalaya using an integration of passive and controlled source seismology (Science and Engineering Research Board, DST).
- Proposed to establish a 'Center for excellence in Shallow Crustal Imaging' laboratory in Biswajeet scheme.

Conference Presentations

- Wang, H., Singh S.C., **Ghosal D.**, (2012). A combined full wave equation tomography-full waveform inversion and its application to 12 km long streamer data from offshore western Sumatra, *AGU Fall meeting*, 1, 08 (poster)
- **Ghosal D.**, Singh S.C., Chauhan A.P.S, Carton H, Hananto N.D., (2012). State of the art seismic processing and structure of the Sumatra margin, *Penrose conference, Il ciacco, Italy* (poster).

- **Ghosal D.**, Singh S.C., Chauhan A.P.S, Hananto N.D., (2011). Shallow subsurface morphotectonics at the Northern offshore Sumatra subduction system using high resolution reflection and refraction seismic, *Amer. Geophy. Union, San Francisco, USA* (oral).
- **Ghosal D.**, Singh S.C., Chauhan A.P.S, Hananto N.D., (2011). High resolution tomography and seismic image of the Northern Sumatra subduction system, *British Geophy. Assoc. London, UK* (poster).
- **Ghosal D.**, Singh S.C., Chauhan A.P.S, Hananto N.D., (2009). New insights on the Great Sumatra fault, NW offshore Sumatra, from marine data, *Amer. Geophy. Union, San Francisco, US* (poster- T33B-1917).

Journal Publications

- **Ghosal D.**, Mukti, M., Singh S.C, Carton, H., (2016). Forearc structures offshore Northern Sumatra revisited: using high resolution marine geophysical data, *Geochem. Geophys. Geosys.* (communicated).
- **Ghosal D.**, Singh S.C, Martin J, (2014). Shallow subsurface morphotectonics of the NW Sumatra subduction system using an integrated seismic imaging technique, *Geophysical Jour. Int.*, 198, 1818-1831.
- **Ghosal D.**, Singh S.C., Chauhan A.P.S, Hananto N.D., (2012). New insights on the offshore extension of the Great Sumatran fault, NW Sumatra, from marine geophysical studies, *Geochem. Geophys. Geosys.*, 13, 11, doi: 10.1029/2012GC004122.
- Singh. S.C, Chauhan A.P.S, Calvert A. J., Hananto N.D., **Ghosal D.**, Rai A., Carton H., (2012). Seismic evidence of bending and unbending of subducting oceanic crust and the presence of mantle megathrust, *Earth and Planetary science letters*, 301, 166-176.

Recent Field Experience

2016 Participated in a marine geophysical expedition [MIRAGE](#) over Wharton basin and organised an international summer school onboard.

Technical Skill-sets

- PARADIGM product FOCUS 5.4 and Seismic Unix (to process MCS data), GeoDepth (for Pre-stack Depth migration), SAC (to analyze earthquake seismological data), HydrateRessim (to simulate the behaviour of hydrates in geologic media).
- Proficient computer programmer using Fortran 90 and Matlab.
- Knowledge on Shell scripting, AWK and GMT.
- Windows98/XP/2000, Linux (Redhat, Ubuntu), Microsoft Office, Latex, Adobe illustrator.

Professional Training

- 3 months training on C programming at NIIT, Hyderabad from Wipro technologies.
- 1 month training on Seismic data acquisition, processing and interpretation from the Oil and Natural gas Corporation (ONGC), India.

