

# Sami Samiei Esfahany

## curriculum vitae

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### Career History

*09/2017-Present:* Assistant Professor of Geodesy, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran  
*08/2017-Present:* Guest Researcher, Geoscience and Remote Sensing, TUDelft  
*2013-2017:* Post-doc Researcher, Geoscience and Remote Sensing, TUDelft  
*2009-2013:* PhD Candidate, Group of Mathematical Geodesy and Positioning, TUDelft  
*2008-2009:* Researcher, Group of Mathematical Geodesy and Positioning, TUDelft  
*2005-2008:* MSc Study, teaching and research assistant, TUDelft  
*2003-2005:* Freelance surveyor for different construction projects, Tehran, Iran

### Education

*Ph.D., Geodesy and Remote-Sensing (2017)*  
Department of Geoscience and Remote Sensing, Section of mathematical geodesy and positioning, Delft University of Technology, the Netherlands,  
Thesis title: Exploitation of distributed scatterers in synthetic aperture radar interferometry

*MSc, Geomatics Engineering (2008)*  
Delft University of Technology, the Netherlands  
Thesis title: Improving Persistent Scatterer Interferometry for Subsidence Monitoring: Case study on the Gardanne mining site

*BSc, Civil-Surveying Engineering (2004)*  
Amirkabir University of Technology, Tehran, Iran

### Research Projects

*2015-2017:* Uniformization of geodetic data for deformation analysis, for long-term study on anomalous time-dependent subsidence in the Wadden Sea Region, Phase-II, Client: Nederlandse Aardolie Maatschappij (NAM) and Royal Dutch Shell

*2013-2015:* Research and Development Project for Geodetic Deformation Monitoring, Contribution to the research project: 'Long-term study on anomalous time-dependent subsidence in the Wadden Sea Region', Client: Nederlandse Aardolie Maatschappij (NAM) and Royal Dutch Shell

*2009-2013:* PS-InSAR processing support for subsidence monitoring in the Groningen area, Client: Nederlandse Aardolie Maatschappij (NAM) and Royal Dutch Shell

*2009:* PS-InSAR analysis of the subsidence in Noordwest-Friesland, Collaboration with TNO, Client: Dutch ministry of economic affairs, State supervision of mines.

*2006:* Technical feasibility study of using satellite radar interferometry for monitoring dikes of Netherlands, Client: Delft University of Technology.

**Teaching Experience**

*Lecturer:* 'Geodetic Control Surveying'  
BSc course, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran (2018)

*Lecturer:* 'Estimation Theory'  
BSc course, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran (2018)

*Lecturer:* 'Seminar and Research Methodology'  
MSc course, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran (2018)

*Lecturer:* 'Advanced Geodynamics'  
MSc course, School of Surveying and Geospatial Engineering, College of Engineering, University of Tehran (2017)

*Project manager and Lecturer:* Development and design of an online EdX course titled 'Observation Theory: Estimating the Unknown' (2016, 2017)

*Workshop Lecturer:* workshop on *InSAR for earthquake modeling* at University of Tehran (2016, Iran)

*Lecturer:* 'Geo-Measurement Processing (Estimation theory)'  
MSc course in Geoscience and Remote Sensing, TUDelft, (2013, 2014, 2015)

*Workshop Lecturer:* 'Applying Synthetic Aperture Radar Interferometry' at Advanced Workshop on Evaluating, Monitoring and Communicating Volcanic and Seismic Hazards in East Africa 2009 and 2013, International Center for Theoretical Physics (ICTP), Trieste, Italy

*Guest Lecturer:*  
Radar Remote Sensing and Deformation Monitoring (MSc), TUDelft  
Multivariate Geostatistics (MSc), TUDelft  
Geodesy and Natural Hazards (MSc), TUDelft  
Geodesy and Remote-Sensing (MSc), TUDelft  
Geo-signal analysis (MSc), TUDelft

**Research Interest** Satellite radar interferometry (InSAR) and its applications,  
Radar remote-sensing,  
Geodetic deformation analysis (tectonics and subsidence),  
Inverse problems in Geophysics,  
Estimation theory,  
Geo-statistics.

## List of Publications

- Publications:** **On the concept of 'idealization noise' in using geodetic data for subsidence modeling: Implication in Long- term subsidence in the Wadden Sea Region, the Netherlands**  
**Working papers (In Preparation)** **Samiei-Esfahany, S.**; Bähr, H. ; Hanssen, R.F. ; Mossop. T.  
Journal of Geodesy
- Estimation of clay soil shrinkage over agricultural fields using satellite radar interferometry**  
te Brake, B.; **Samiei-Esfahany, S.**; Hanssen, R.F.  
Hydrology and Earth System Sciences
- Optimal subset selection in InSAR stacks**  
**Samiei-Esfahany, S.**; Hanssen, R.F.  
Journal of Geodesy
- Uniformization of geodetic data for deformation analysis**  
van Leijen, F.; **Samiei-Esfahany, S.**; van der Marel, H.; Hanssen, R.F.  
Computer and Geosciences
- Publications:** **A Periodic Temporal Decorrelation Model in InSAR Stacks**  
**Journals** **Samiei-Esfahany, S.** ; Hanssen, R.F.  
IEEE Transaction on Geoscience and Remote Sensing, *submitted manuscript*
- On the Evaluation of Second Order Phase Statistics in SAR Interferogram Stacks**  
**Samiei-Esfahany, S.** ; Hanssen, R.F.  
International Journal of Earth Observation and Geomatics Engineering, June 2017
- InSAR datum connection using GNSS-augmented radar transponders**  
Mahapatra, P.S.; van der Marel, H. ; van Leijen, F. ; **Samiei-Esfahany, S.** ; Klees, R. ; Hanssen, R.F.  
Journal of Geodesy, 15 June 2017
- Phase Estimation for Distributed Scatterers in InSAR Stacks using Integer Least Squares Estimation**  
**Samiei-Esfahany, S.** ; Martins, J. ; van Leijen, F. ; Hanssen, R.F.  
IEEE Transaction on Geoscience and Remote Sensing, 2016 (Volume:54 , Issue:10)
- Geodetic Network Design for InSAR**  
Mahapatra, P.S.; **Samiei-Esfahany, S.** ; Hanssen, R.F.  
IEEE Transaction on Geoscience and Remote Sensing, 2015 (Volume:53 , Issue:7)
- On the Use of Transponders as Coherent Radar Targets for SAR Interferometry**  
Mahapatra, P.S.; **Samiei-Esfahany, S.** ; van der Marel, H. ; Hanssen, R.F.  
IEEE Transaction on Geoscience and Remote Sensing, 2014 (Volume:52, Issue:3)
- Publications:** **On the effect of soil moisture phase inconsistencies on distributed scatterers phase estimators in InSAR stacks**  
**Proceeding and Conference Contributions** **Samiei-Esfahany, S.**; López-Dekker P.; Hanssen, R.F.;  
Fringe 2017 workshop proceedings, 2017

**InSAR estimates of clay dynamics related to soil moisture: a case study over an agricultural area in the Netherlands**

te Brake, B. ; Samiei-Esfahany, S.; Hanssen, R.F.;

Fringe 2017 workshop proceedings, 2017

**Geodetic network design for InSAR using reflectors and transponders**

Mahapatra, P.S.; Samiei-Esfahany, S. ; Hanssen, R.F.

IEEE Geoscience and Remote Sensing IGARSS, 2014

**PS-InSAR monitoring of landslide activity in the Black Sea coast of the Caucasus**

Kiseleva E., Mikhailov V., Smolyaninova E., Dmitriev P., Golubev V., Timoshkinaa E., Hooper A., Samiei-Esfahany, S., Hanssen R.F.

Proceedings of CENTERIS 2014

**New algorithm for InSAR stack phase triangulation using integer least squares estimation**

Samiei-Esfahany, S. ; Hanssen, R.F.

IEEE Geoscience and Remote Sensing IGARSS, 2013

**Geodetic quality assessment of a low-cost InSAR transponder**

Mahapatra, P.S.; Samiei-Esfahany, S. ; Hanssen, R.F. ; van der Marel, H.

IEEE Geoscience and Remote Sensing IGARSS, 2013

**On the Use of Transponders as Coherent Radar Targets for SAR Interferometry**

Mahapatra, P.S.; van der Marel, H. ; Hanssen, R.F.; Holley, R. ; Samiei-Esfahany, S. ; Komac, M. ; Fromberg, A.

IEEE Transactions on Geoscience and Remote Sensing, 2013

**Radar transponders and their combination with GNSS for deformation monitoring**

Mahapatra, P.S.; van der Marel, H.; Hanssen, R.F. ; Holly, R. ; Samiei-Esfahany, S. ; Komac, M.; Fromberg, A.

IEEE Geoscience and Remote Sensing IGARSS, 2012

**Compact Active Transponders for SAR Interferometry: Experimental Validation**

Mahapatra, P.S.; Hanssen, R.F. ;Samiei-Esfahany, S.

Fringe 2011 workshop proceedings, 2011

**On the Effect of Reference Frame Motion on InSAR Deformation Estimates**

Bahr, H. ; Samiei-Esfahany, S. ; Hanssen, R.F.

Fringe 2011 workshop proceedings, 2011

**Time-Series InSAR: An Integer Least-Squares Approach for Distributed Scatterers**

Samiei-Esfahany, S. ; Hanssen, R.F.

Fringe 2011 workshop proceedings, 2011

**Separating Non-Linear Deformation and Atmospheric Phase Screen (APS) for InSAR Time Series Analysis Using Least-Squares Collocation**

Liu, S. ; Hanssen, R.F. ; Samiei-Esfahany, S. ; Hooper, A. ; van Leijen, F.

Fringe 2011 workshop proceedings, 2011

**A least squares approach for joining persistent scatterer INSAR time series acquired by different satellites**

Caro Cuenca, M. ; **Samiei-Esfahany, S.** ; Hanssen, R.F.  
Proceedings of the Living Planet Symposium 2010

**On The Effect of Horizontal Deformation on InSAR Subsidence Estimates**

**Samiei-Esfahany, S.** ; Hanssen, R.F.; Thienen-Visser, K. ; Muntendam-Bos, A.  
Fringe 2009 workshop proceedings, 2009

**Lessons learned from PSIC4: Improving PS-InSAR Results For a Constrained Test Site**

**Samiei-Esfahany, S.** ; van Leijen, F. ; Marinkovic, P. ; Ketelaar, G. ; Hanssen, R.F.  
Fringe 2007 workshop proceedings, 2007

**Publications:** **Uniformization of geodetic data for deformation analysis, for Long-term**  
**Project Reports** **study on anomalous time-dependent subsidence in the Wadden Sea Region, Phase-II**

van Leijen, F.; **Samiei-Esfahany, S.**; van der Marel, H.; Hanssen, R.F.  
TuDelft Project Report

**Research and Development Project for Geodetic Deformation Monitoring, for Long-term study on anomalous time-dependent subsidence in the Wadden Sea Region**

**Samiei-Esfahany, S.** ; Bañr, H.  
NAM/Shell Project Report

**PS-InSAR analysis of the subsidence in Noordwest-Friesland**

Muntendam Bos A.G.; Hanssen R.F.; van Thienen-Visser K.; **Samiei-Esfahany, S.**  
TNO Rapport, November, 2009, Client: Dutch ministry of economic affairs, State supervision of mines.

**POSEIDON: On the potential of satellite radar interferometry for monitoring dikes of the Netherlands**

Dentz F.; van Halderen L.; Pospel B.; **Samiei-Esfahany, S.**; Slobbe C.; Wortel T.  
Delft Institute of Earth Observation and Space Systems, TU Delft , 2006, Technical Report