

Space Geodesy Seminar - SIOG 237

<http://igppweb.ucsd.edu/~fialko/siog237.html>

The main objectives of this seminar course are to learn the basic principles of InSAR, develop practical understanding of the data processing algorithms, and follow recent topics and advances in the literature.

Instructors

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Seminar course, S/U grade.

Time: Fri, 1:00-1:50 PM, virtual meetings

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SYLLABUS

Date	Topic	Reading	Discussion Leader(s)
08 JAN	Space Geodesy - Intro	notes	Yuri
15 JAN	Principles of radar	notes	Yuri
22 JAN	Synthetic Aperture Radar (SAR) - image formation	notes notes	Yuri
29 JAN	SAR interferometry	notes	Yuri
05 FEB	InSAR - phase filtering, unwrapping, geocoding	notes notes	Yuri
12 FEB	Biggs & Wright, How satellite InSAR has grown from opportunistic science to routine monitoring over the last decade Parizzi et al., InSAR Performance for Large-Scale Deformation Measurement	(PDF) (PDF)	Ben, Marnie

19 FEB	Kim et al., Surface Soil Moisture Retrieval Using the L-Band Synthetic Aperture Radar Onboard the Soil Moisture Active-Passive Satellite and Evaluation at Core Validation Sites Molan and Lu, Can InSAR Coherence and Closure Phase Be Used to Estimate Soil Moisture Changes?	(PDF) (PDF)	Amy & Ellis, Zel
26 FEB	Dalaison and Jolivet, A Kalman Filter Time Series Analysis Method for InSAR	(PDF)	Zeyu
05 MAR	Bui et al., Disruptive influences of residual noise, network configuration and data gaps on InSAR-derived land motion rates using the SBAS technique Parizzi et al., InSAR Performance for Large-Scale Deformation Measurement	(PDF) (PDF)	Xinyu, Marnie
12 MAR	Albino et al., Automated Methods for Detecting Volcanic Deformation Using Sentinel-1 InSAR Time Series Illustrated by the 2017-2018 Unrest at Agung, Indonesia	(PDF)	Canyon

Suggested books:

Curlander, John C.. Synthetic aperture radar : systems and signal processing/, John C. Curlander, Robert N. McDonough. New York : Wiley, c1991. xvii, 647 p.: ill. ; 24 cm. Series title: Wiley series in remote sensing Language: EnglishUCSD S & E TK6592.S95 C87 1991

Elachi, C., Introduction to the Physics and Techniques of Remote Sensing, .New York: Wiley, c1987. xvii, 413 p.

Ghiglia, Dennis C.. Two-dimensional phase unwrapping : theory, algorithms,and software /, Dennis C. Ghiglia, Mark D. Pritt. New York : Wiley, c1998. xiv,493 p. : ill. ; 25 cm.

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Last modified: Thu Jan 28 12:14:42 PST 2021