Stanford

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Bio

BIO

Hi, I'm Elizabeth Wig! I'm a PhD student in electrical engineering at Stanford, and I research how we can use radar remote sensing to understand more about processes on Earth. I work mainly on InSAR (interferometric synthetic aperture radar), which looks at how radar phase changes from one image to another to tell us how Earth is changing. I'm particularly interested in measuring how vegetation and soil moisture change in dynamic environments, like agricultural areas and permafrost regions. My favorite types of problems involve modeling how electromagnetic waves interact with their environment, and then combining those models with real-world data to learn more about the environment by analyzing the waves that pass through it.

Publications

PUBLICATIONS

- **HIGH-RESOLUTION MEASUREMENT OF SOIL MOISTURE FROM INSAR PHASE CLOSURE**
  Wig, E., Michaelides, R., Zebker, H., IEEE
  IEEE.2022: 919-922

- **Identifying active retrogressive thaw slumps from ArcticDEM** *ISPRS JOURNAL OF PHOTOGRAMMETRY AND REMOTE SENSING*
  Huang, L., Willis, M. J., Li, G., Lantz, T. C., Schaefer, K., Wig, E., Cao, G., Tiampo, K. F.
  2023; 205: 301-316

- **Permafrost Dynamics Observatory (PDO): 2. Joint Retrieval of Permafrost Active Layer Thickness and Soil Moisture From L-Band InSAR and P-Band PolSAR** *EARTH AND SPACE SCIENCE*
  Chen, R. H., Michaelides, R. J., Zhao, Y., Huang, L., Wig, E., Sullivan, T. D., Parsekian, A. D., Zebker, H. A., Moghaddam, M., Schaefer, K. M.
  2023; 10 (1)

- **Fast, Fully-Automatic Characterization of Metallic and Water-Based Threat Objects for Millimeter-Wave Personnel Screening Systems** *IEEE OPEN JOURNAL OF ANTENNAS AND PROPAGATION*
  Tajdini, M. M., Asri, M., Wig, E., Gamage, A., Rappaport, C. M.
  2023; 4: 245-253

- **Automatic Threat Prediction of Body-Worn Objects for Security Screening Purposes** *IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION*
  Asri, M., Tajdini, M. M., Wig, E., Rappaport, C. M.
  2022; 70 (10): 9732-9741

- **Automatic Classification of Low-Loss and Lossless Materials in Wideband Radar Images for Millimeter-Wave Personnel Screening Systems**
  Asri, M., Tajdini, M., Wig, E., Rappaport, C., IEEE
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- **Validation of Permafrost Active Layer Estimates from Airborne SAR Observations** *REMOTE SENSING*
  Parsekian, A. D., Chen, R. H., Michaelides, R. J., Sullivan, T. D., Clayton, L. K., Huang, L., Zhao, Y., Wig, E., Moghaddam, M., Zebker, H., Schaefer, K.
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