

# Stanford

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## Maria Sakovsky

Assistant Professor of Aeronautics and Astronautics

### Bio

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#### BIO

Maria Sakovsky's work focuses on the use of shape adaptation to realize space structures with reconfigurable geometry, stiffness, and even non-mechanical performance (ex. electromagnetic, optical). Particular focus is placed on the mechanics of thin fiber reinforced composite structures, the interplay between composite material properties and structural geometry, as well as embedded functionality and actuation of lightweight structures. The work has led to applications in deployable space structures, reconfigurable antennas, and soft robotics.

Maria Sakovsky received her BSc in Aerospace Engineering from the University of Toronto. Following this, she completed her MSc and PhD in Space Engineering at Caltech, where she developed a deployable satellite antenna based on origami concepts utilizing elastomer composites. She concurrently worked with NASA's Jet Propulsion Laboratory on developing cryogenically rated thin-ply composite antennas for deep space missions. For her ongoing research on physically reconfigurable antennas, she was awarded the ETH Zürich postdoctoral fellowship as well as the Innovation Starting Grant.

#### ACADEMIC APPOINTMENTS

- Assistant Professor, Aeronautics and Astronautics

### Teaching

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#### COURSES

##### 2022-23

- Introduction to Mechanics of Composite Materials: AA 156 (Spr)
- Large Spacecraft Structures: AA 114Q (Aut)
- Spacecraft Design Laboratory: AA 236B (Win)

##### 2021-22

- Large Spacecraft Structures: AA 114Q (Spr)

#### STANFORD ADVISEES

##### Doctoral Dissertation Reader (AC)

Anthony Bombik, Harsh Patel

##### Orals Evaluator

Anthony Bombik, Elliot Ransom

##### Master's Program Advisor

Grace Edahl, Todd Hunt, Jackson Kennedy, Yash Taneja

## Publications

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### PUBLICATIONS

- **A Highly Multi-Stable Meta-Structure via Anisotropy for Large and Reversible Shape Transformation.** *Advanced science (Weinheim, Baden-Wurtemberg, Germany)*  
Risso, G., Sakovsky, M., Ermanni, P.  
2022; e2202740
- **A thin -shell shape adaptable composite metamaterial** *COMPOSITE STRUCTURES*  
Sakovsky, M., Ermanni, P.  
2020; 246