

REFERENCES

- [1] M. Chandra, S. Kumar, S. Chattopadhyaya, S. Chatterjee, and P. Kumar, “A review on developments of deployable membrane-based reflector antennas,” *Advances in Space Research*, vol. 68, no. 9, pp. 3749–3764, Nov. 2021, doi: 10.1016/J.ASR.2021.06.051.
- [2] G. Zhang, J. Wang, J. Guo, J. He, Y. Xu, and Y. Zhao, “A novel single-DoF deployable antenna mechanism based on heterogeneous modules: Configuration design and performance analysis,” *Thin-Walled Structures*, vol. 203, p. 112232, Oct. 2024, doi: 10.1016/J.TWS.2024.112232.
- [3] P. Zhao, C. Wu, and Y. Li, “Design and application of solar sailing: A review on key technologies,” *Chinese Journal of Aeronautics*, vol. 36, no. 5, pp. 125–144, May 2023, doi: 10.1016/J.CJA.2022.11.002.
- [4] B. Fu, E. Sperber, and F. Eke, “Solar Sail Technology-A State of the Art Review.”
- [5] T. W. Liu, J. B. Bai, N. Fantuzzi, and X. Zhang, “Thin-walled deployable composite structures: A review,” *Progress in Aerospace Sciences*, vol. 146, p. 100985, Apr. 2024, doi: 10.1016/J.PAEROSCI.2024.100985.
- [6] S. Wang, M. Schenk, S. Jiang, and A. Viquerat, “Blossoming analysis of composite deployable booms,” *Thin-Walled Structures*, vol. 157, Dec. 2020, doi: 10.1016/j.tws.2020.107098.
- [7] “XIN: Modeling and analysis of deployment dynamics... - Google Scholar.” Accessed: Nov. 04, 2024. [Online]. Available: https://scholar.google.com/scholar_lookup?title=Modeling%20and%20analysis%20of%20deployment%20dynamics%20for%20UltraFlex%20solar%20array&publication_year=2020&author=P.%20Xin&author=Z.%20Liu&author=J.%20Rong&author=C.%20Liu&author=Z.%20Wu&author=B.%20Liu
- [8] X. Lan *et al.*, “World’s first spaceflight on-orbit demonstration of a flexible solar array system based on shape memory polymer composites,” *Sci China Technol Sci*, vol. 63, no. 8, pp. 1436–1451, Aug. 2020, doi: 10.1007/s11431-020-1681-0.
- [9] P. Seefeldt, J. T. Grundmann, M. Hillebrandt, and M. Zander, “Performance analysis and mission applications of a new solar sail concept based on crossed booms with tip-deployed membranes,” *Advances in Space Research*, vol. 67, no. 9, pp. 2736–2745, May 2021, doi: 10.1016/j.asr.2020.10.001.
- [10] C. Wang, H. Guo, R. Liu, and Z. Deng, “A programmable origami-inspired space deployable structure with curved surfaces,” *Eng Struct*, vol. 256, p. 113934, Apr. 2022, doi: 10.1016/J.ENGSTRUCT.2022.113934.

- [11] G. Kiper and E. Söylemez, “Deployable space structures,” in *RAST 2009 - Proceedings of 4th International Conference on Recent Advances Space Technologies*, 2009, pp. 131–138. doi: 10.1109/RAST.2009.5158183.
- [12] J. He, Y. Zhang, Z. Shangguan, and L. Yang, “A Review of Bionic Design in Satellite Solar Wing Structures,” *J Phys Conf Ser*, vol. 1549, no. 4, Jun. 2020, doi: 10.1088/1742-6596/1549/4/042099.
- [13] S. Yu, J. Liu, P. Zhao, and Y. Tang, “A flat-foldable equiangular spiral folding pattern inspired by sunflowers for deployable structures,” *Chinese Journal of Aeronautics*, vol. 37, no. 6, pp. 425–438, Jun. 2024, doi: 10.1016/j.cja.2023.10.004.
- [14] P. M. Liyanage, N. Gangasudan, and H. M. Y. C. Mallikarachchi, “Modified spiral folding pattern for deployable membranes,” *Aerosp Sci Technol*, vol. 117, p. 106926, Oct. 2021, doi: 10.1016/J.AST.2021.106926.
- [15] H. Sakamoto *et al.*, “Folding patterns of planar gossamer space structures consisting of membranes and booms,” *Acta Astronaut*, vol. 94, no. 1, pp. 34–41, 2014, doi: <https://doi.org/10.1016/j.actaastro.2013.07.036>.
- [16] G. Greschik and M. M. Mikulas, “Design Study of a Square Solar Sail Architecture,” *J Spacecr Rockets*, vol. 39, no. 5, pp. 653–661, 2002, doi: 10.2514/2.3886.
- [17] M. Arya, N. Lee, and S. Pellegrino, “Crease-free biaxial packaging of thick membranes with slipping folds,” *Int J Solids Struct*, vol. 108, pp. 24–39, 2017, doi: <https://doi.org/10.1016/j.ijsolstr.2016.08.013>.
- [18] N. Okuizumi and T. Yamamoto, “Centrifugal Deployment of Membrane with Spiral Folding: Experiment and Simulation,” *Journal of Space Engineering*, vol. 2, no. 1, pp. 41–50, 2009, doi: 10.1299/spacee.2.41.
- [19] S. Guest and S. Pellegrino, “Inextensional wrapping of flat membranes,” *Proceedings of International Seminar Structure Morphology*, Aug. 1992.
- [20] Y. Tsuda *et al.*, “Achievement of IKAROS — Japanese deep space solar sail demonstration mission,” *Acta Astronaut*, vol. 82, no. 2, pp. 183–188, Feb. 2013, doi: 10.1016/J.ACTAASTRO.2012.03.032.
- [21] M. C. Natori, N. Kishimoto, H. Watanabe, and K. Higuchi, “Morphological Concepts on Efficient Space Structures with Deployable and/or Adaptive Functions,” 2008.
- [22] M. C. Natori, N. Katsumata, and H. Yamakawa, “Membrane Modular Space Structures and Deployment Characteristics of Their Inflatable Tube Elements,” in *51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*. doi: 10.2514/6.2010-2909.

- [23] H. Kobayashi, B. Kresling, and J. F. V Vincent, “The geometry of unfolding tree leaves,” *Proc R Soc Lond B Biol Sci*, vol. 265, no. 1391, pp. 147–154, 1998, doi: 10.1098/rspb.1998.0276.
- [24] N. Lee and S. Pellegrino, “Multi-Layered Membrane Structures with Curved Creases for Smooth Packaging and Deployment.”
- [25] N. Lee and S. Close, “Curved pleat folding for smooth wrapping,” *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, vol. 469, no. 2155, p. 20130152, 2013, doi: 10.1098/rspa.2013.0152.
- [26] S. R. Woodruff and E. T. Filipov, “Bending and twisting with a pinch: Shape morphing of creased sheets,” *Extreme Mech Lett*, vol. 52, p. 101656, 2022, doi: <https://doi.org/10.1016/j.eml.2022.101656>.
- [27] V. Parque and T. Miyashita, “On spiral folding of planar membranes with finite thickness and curved creases,” 2022. [Online]. Available: <http://asmedigitalcollection.asme.org/IDETC-CIE/proceedings-pdf/IDETC-CIE2022/86236/V03BT03A016/6943216/v03bt03a016-detc2022-90145.pdf>
- [28] A. Ghassaei, E. D. Demaine, and N. A. Gershenfeld, “Fast , Interactive Origami Simulation using GPU Computation,” 2018. [Online]. Available: <https://api.semanticscholar.org/CorpusID:52839481>
- [29] Q. Lin *et al.*, “Wrapping Deployment Simulation Analysis of Leaf-Inspired Membrane Structures,” *Aerospace*, vol. 8, no. 8, 2021, doi: 10.3390/aerospace8080218.
- [30] S. Mierunalan, S. P. Dassanayake, H. M. Y. C. Mallikarachchi, and S. H. Upadhyay, “Simulation of ultra-thin membranes with creases,” *International Journal of Mechanics and Materials in Design*, vol. 19, no. 1, pp. 73–94, 2023, doi: 10.1007/s10999-022-09617-6.
- [31] N. Sutharsanan and H. M. Y. C. Mallikarachchi, “Characterising self-opening behaviour of single creased kapton polyimide films,” 2021.