Who Owns Space? Economic Implications for Designing Future Space Governance

Context:	The 1967 Outer Space Treaty established space as a global common, emphasizing peaceful use and prohibiting national sovereignty claims. However, the rise of commercial space ventures and militarization raises questions about its adequacy. This thesis explores economic and political dimensions of space governance, focusing on interactions between states, corporations, and international organizations. Drawing on multilateral agreements like the High Seas Treaty, it investigates potential frameworks for modern space governance amid growing commercialization and competition.
Research question:	Who owns outer space? What are the economic, legal, and governance implications of treating space as a global common, and what game-theoretic incentive structures can foster international cooperation? Lessons from frameworks like the High Seas Treaty will be considered. Start with [1], [2], [3], [4], [5].
Methods:	° Game Theory: Apply models like the prisoner's dilemma to explore international cooperation and competition in space governance, focusing on resource extraction and space traffic management. ° Comparative Legal/Economic Analysis: Assess treaties like the Outer Space and High Seas Treaties to explore how space law can adapt to challenges like space mining and militarization. ° Network Analysis: Map interactions between states, corporations, and organizations using network data to identify key players and alliances. ° Case Studies: Analyze space activities of major spacefaring nations and private enterprises to assess their influence on policy. ° Data Analysis: Use space launch data, satellite ownership, and investment trends to predict the future of space commercialization.
Data Sources:	° UNOOSA: Space treaties and laws. ° ITU: Satellite and communication data. ° OECD Space Forum: Economic data on the space sector. ° FAA and SpaceX: Space launch statistics. ° SIPRI: Data on space militarization. ° Network Data: Scopus, Web of Science, NASA databases.
Requirements:	Understanding of incentive-based policy design and data analysis skills in R or Python are preferred. The thesis can be written in English (preferred) or German.
Supervision:	Ingrid Ott (ingrid.ott@kit.edu)
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References

[1] Kristin Deasy. What we know about the new high seas treaty. *npj Ocean Sustainability*, 2(1), 2023.

[2] Scott Barrett. Self-enforcing international envitonmental agreements. *Oxford Economic Papers*, 46:878–894, 1994.

[3] Elinor Ostrom. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press, 1990.

[4] EFI. Deutsche Raumfahrt zwischen Old und New Space. In Expertenkommission Forschung und Innovation, editor, *Jahresgutachten 2023*, chapter B3, pages 78–96. EFI, 2023.

[5] Scott J. Shackelford. Governing the final frontier: A polycentric approach to managing space weaponization and debris. *American Business Law Journal*, 51(2):429–513, 2014.