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**Legal aspects of Active Debris Removal (ADR):  
regulation of ADR under international space law and  
the way forward for legal development**

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# Selected Bibliography

## I Treaties, Conventions and International Agreements

- Charter of the United Nations, Adopted 26 June 1945, entered into force 24 October 1945, 1 UNTS XVI.
- Statute of the International Court of Justice, adopted 26 June 1945, entered into force 24 October 1945, 33 UNTS 993.
- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, adopted 19 December 1966, entered into force 10 Oct. 1967, 610 UNTS 205.
- Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, adopted 19 December 1967, entered into force 3 December 1968, 672 UNTS 179.
- Convention on International Liability for Damage Caused by Space Objects, adopted 29 November 1971, entered into force 1 September 1972, 961 UNTS 187.
- Convention on Registration of Objects Launched into Outer Space, adopted 12 November 1974, entered into force 15 September 1976, 1023 UNTS 15.
- Vienna Convention on the Law of Treaties, adopted 23 May 1969, entered into force 27 January 1980, 1155 UNTS 332.
- Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, adopted 5 December 1979, entered into force 11 July 1984, 1363 UNTS 3.
- United Nations Convention on the Law of the High Seas, adopted 10 December 1982, entered into force 16 November 1994, 1833 UNTS 3.
- Paris Agreement to United Nations Framework Convention on Climate Change, adopted 12 December 2015, entered into force 4 November 2016, registration no 54113.

## II Court Cases, Arbitrations and Advisory Opinions

- *Aegean Sea Continental Shelf, Judgment*, I.C.J. Reports 1978, p. 3.
- *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua) and Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica)*, Judgment, I.C.J. Reports 2015, p. 665.
- *Competence of Assembly regarding admission to the United Nations, Advisory Opinion*: I.C.J. Reports 1950, p. 4.
- *Corfu Channel case, Judgment of April 9<sup>th</sup>, 1949*: I.C.J. Reports 1949, p. 4.
- *Dispute regarding Navigational and Related Rights (Costa Rica v. Nicaragua)*, Judgment, I.C.J. Reports 2009, p. 213.
- *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgment, I. C. J. Reports 1997, p. 7.
- *Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970)*, Advisory Opinion, I.C.J. Reports 1971, p. 16.

- *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion*, I.C.J. Reports 2004, p. 136.
- *Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion*, I. C. J. Reports 1996, p. 226.
- *Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. United States of America). Merits, Judgment*. I.C.J. Reports 1986, p. 14.
- *Nuclear Tests (Australia v. France), Judgment*, I.C.J. Reports 1974, p. 253.
- *Oil Platforms (Islamic Republic of Iran v. United States of America), Judgment*, I. C. J. Reports 2003, p. 161.
- *Pulp Mills on the River Uruguay (Argentina v. Uruguay), Judgment*, I.C.J. Reports 2010, p. 14.
- *Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion*, ITLOS Reports 2011, 1 February 2011.
- *Territorial Dispute (Libyan Arab Jamahiriya/Chad), Judgment*, I.C.J. Reports 1994, p. 6.
- *Trail Smelter Case (United States v. Canada) (1941) III RIAA 1905.*
- *United States – Import Prohibition of Certain Shrimp and Shrimp Products, Report of the Appellate Body, WT/DS58/AB/R*, 12 October 1998.

### III United Nations Documents

#### 1 General Assembly Resolutions

- UNGA Resolution 1962 (XVIII) of 13 December 1963, Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space.
- UNGA Resolution 32/84 of 12 December 1977, Prohibition of the Development and Manufacture of New Types of Weapons of Mass Destruction and New Systems of such Weapons, UN Doc. A/RES/32/84.
- UNGA Resolution 51/122 of 13 December 1996, Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries, UN Doc. A/RES/51/122.
- UNGA Resolution 59/115 of 25 January 2005, Application of the Concept of 'Launching State', UN Doc. A/RES/59/115.
- UNGA Resolution 62/101 of 17 December 2007, Recommendations on Enhancing the Practice of States and International Intergovernmental Organizations in Registering Space Objects, UN Doc. A/RES/62/101.
- UNGA Resolution 68/74 of 11 December 2013, Recommendations on National Legislation relevant to the Peaceful Exploration and Use of Outer Space, UN Doc. A/RES/68/74.
- UNGA Resolution 72/78 of 14 December 2017, Declaration on the Fiftieth Anniversary of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, UN Doc. A/RES/72/78.
- UNGA Resolution 76/231 of 24 December 2021, Reducing Space Threats through Norms, Rules and Principles of Responsible Behaviours, UN Doc. A/RES/76/231.

- UNGA Resolution 78/20 of 4 December 2023, Reducing Space Threats through Norms, Rules and Principles of Responsible Behaviours, UN Doc. A/RES/78/20.

## 2 *International Law Commission*

- International Law Commission, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries. *Yearbook of the International Law Commission* (2001), vol. II, Part two.
- International Law Commission, Draft Articles on Responsibility of States for Internationally Wrongful Acts, with commentaries. *Yearbook of the International Law Commission* (2001), vol. II, Part two.
- International Law Commission, Draft Conclusions on Subsequent Agreements and Subsequent Practice in Relation to the Interpretation of Treaties, with commentaries. *Yearbook of the International Law Commission* (2008), vol. II, Part two.
- International Law Commission, Draft Principles on Protection of the Environment in Relation to Armed Conflicts, with commentaries. *Yearbook of the International Law Commission* (2022), vol. II, Part two.

## 3 *COPUOS, STSC & LSC Reports*

- Report of the Ad Hoc COPUOS, UN Doc. A/4141 (14 July 1959).
- Report of the COPUOS on its fifty-ninth session, UN Doc. A/71/20 (2016).
- Report of the COPUOS on its sixty-second session, UN Doc. A/74/20 (2019).
- Report of the Scientific and Technical Subcommittee on the work of its thirty-first session, UN Doc. A/AC.105/571 (10 March 1994).
- Report of the Scientific and Technical Subcommittee on its thirty-eighth session, UN Doc. A/AC.105/761 (2 March 2001).
- Report of the Scientific and Technical Subcommittee on its fortieth session, UN Doc. A/AC.105/804 (5 March 2003).
- Report of the Scientific and Technical Subcommittee on its forty-fourth session, UN Doc. A/AC.105/890 (6 March 2007).
- Report of the Scientific and Technical Subcommittee on its fifty-second session, UN Doc. A/AC.105/1088 (27 February 2015).
- Report of the Scientific and Technical Subcommittee on its forty-seventh session, UN Doc. A/AC.105/958 (11 March 2020).
- Report of the COPUOS Scientific and Technical Subcommittee on its fifty-ninth session, UN Doc. A/AC.105/1258 (23 February 2022).
- Report of the Legal Subcommittee on its sixtieth session, UN Doc. A/AC.105/1243 (24 June 2021).

## 4 *Other UN Documents*

- A Practical and Inclusive Approach to Identifying and Studying Challenges and Considering Possible New Guidelines: Conference Room Paper Submitted by Canada, Italy, Japan, Luxembourg, New Zealand, the United Kingdom of Great Britain and Northern Ireland and the United States of America, UN Doc. A/AC.105/C.1/2023/CRP.31/Rev.2 (16 February 2023).

- Active Debris Removal — An Essential Mechanism for Ensuring the Safety and Sustainability of Outer Space: A Report of the International Interdisciplinary Congress on Space Debris Remediation and On-Orbit Satellite Servicing, UN Doc. A/AC.105/C.1/2012/CRP.16 (27 January 2012).
- Additional Considerations and Proposals for Building up Understanding of the Priority Aspects, Comprehensive Meaning and Functions of the Concept and Practices of Ensuring the Long-Term Sustainability of Outer Space Activities – Working Paper Submitted by the Russian Federation, UN Doc. A/AC.105/L.296 (30 April 2015).
- Austria: Report on the Voluntary Implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities, UN Doc. A/AC.105/C.1/2023/CRP.19 (6 February 2023).
- Canada – Annex to Update on Its Reporting Approach for the Voluntary Implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities, UN Doc. A/AC.105/C.1/2023/CRP.8 (6 February 2023).
- Canada’s Views on Reducing Space Threats through norms, rules and principles of Responsible Behaviour, UN Doc. A/AC.294/2022/WP.7 (6 May 2022).
- Consideration of Areas for Possible New Guidelines Concerning the Long-Term Sustainability of Outer Space Activities: Conference Room Paper by Canada, UN Doc. A/AC.105/C.1/2023/CRP.17 (6 February 2023).
- Declaration of the United Nations Conference on the Human Environment, Stockholm, 16 June 1972, UN Doc. A/CONF.48/14/Rev. 1.
- Draft Guidelines for the Long-term Sustainability of Outer Space Activities: Working Paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities, UN Doc. A/AC.105/C.1/L.367 (16 July 2018).
- Draft Terms of Reference, Methods of Work and Workplan of the Working Group on the Long-term Sustainability of Outer Space Activities: Conference Room Paper by the Chair of the Working Group on the Long-term Sustainability of Outer Space Activities, UN Doc. A/AC.105/C.1/2022/CRP.13 (7 February 2022).
- EU Joint Contribution to the Open-Ended Working Group on Reducing Space Threats, Third Part: Current and Future Threats by States to Space Systems, and Actions, Activities and Omissions that Could be Considered Irresponsible: Submitted by the European Union, UN Doc. A/AC.294/2022/WP.18 (15 September 2022).
- EU Joint Contribution to the Works of the Open-Ended Working Group on Reducing Space Threats through Norms, Rules and Principles of Responsible Behaviours: Second Part: Existing International Legal and Other Normative Frameworks Concerning Threats Arising from State Behaviours with respect to Outer Space, UN Doc. A/AC.294/2022/WP.5 (5 May 2022).
- EU Joint Contributions to the Works of the Open-Ended Working Group on Reducing Space Threats through Norms, Rules and Principles of Responsible Behaviours – Part One: Scoping, UN Doc. A/AC.294/2022/WP.2 (13 April 2022).
- General presentation of French Activities and Views Concerning the Long-Term Sustainability of Outer Space Activities, in relation with the Implementation of the 21 Guidelines, UN Doc. A/AC.105/C.1/2022/CRP.20 (7 February 2022).
- Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee on the Peaceful Uses of Outer Space, adopted by COPUOS at its 62<sup>nd</sup> session in June 2019, UN Doc. A/74/20, para. 163 & Annex II.

- Information and Views for Consideration by the Working Group on the Long-term Sustainability of Outer Space Activities, UN Doc. A/AC.105/C.1/L.409/Add.4 (1 December 2022).
- Information on the Official Visit to China of the Director of the United Nations Office for Outer Space Affairs, UN Doc. A/AC.105/2017/CRP.11 (9 June 2017).
- Long-term Sustainability of Outer Space Activities – Working Paper Submitted by the Russian Federation, UN Doc. A/AC.105/L.290 (4 March 2014).
- Meeting Hosted by Switzerland on Possible Further Work on the Long-Term Sustainability of Outer Space Activities: Background and Chair’s Summary, UN Doc. A/AC.105/2019/CRP.16 (18 June 2019).
- OEWG Chairperson’s Summary, UN Doc. A/AC.294/2023/WP.22 (1 September 2023).
- Report of the Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities, UN Doc. A/68/189 (29 July 2013).
- Report of the UN Secretary-General on Reducing Space Threats through Norms, Rules and Principles of Responsible Behaviours, UN Doc. A/76/77 (13 July 2021).
- Report of the World Commission on Environment and Development: Our Common Future, UN Doc. A/42/427 (4 August 1987).
- Report of the Working Group on the Long-term Sustainability of Outer Space Activities: Working paper by the Chair of the Working Group, UN Doc. A/AC.105/2018/CRP.22/Rev.1 (28 June 2018).
- Report on the Implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities in the European Space Agency, UN Doc. A/AC.105/C.1/2022/CRP.14/Rev.1 (7 February 2022).
- Report on the Implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities in Japan, UN Doc. A/AC.105/C.1/2023/CRP.28 (8 February 2023).
- Rio Declaration on Environment and Development, Rio de Janeiro, 13 June 1992, UN Doc. A/CONF.151/26.
- Security Risks, Threats, and Irresponsible Behaviors Undermining Stability in Outer Space: Submitted by the Federal Republic of Germany and the Republic of the Philippines, UN Doc. A/AC.294/2022/WP.17 (6 September 2022).
- Space Debris Mitigation Guidelines of the United Nations Committee on the Peaceful Uses of Outer Space, contained in UN Doc. A/62/20 (2007), annex.
- Study on the Application of Confidence-Building Measures in Outer Space: Report by the Secretary-General, UN Doc. A/48/305 (15 October 1993).
- United Kingdom Update on its Reporting Approach for the Voluntary Implementation of the Guidelines for the Long-Term Sustainability of Outer Space Activities, UN Doc. A/AC.105/C.1/2022/CRP.22 (14 February 2022).
- Working Report of Expert Group B: Space Debris, Space Operations and Tools to Support Collaborative Space Situational Awareness, UN Doc. A/AC.105/2014/CRP.14 (16 June 2014).

## IV Documents of Other International Organisations

### 1 *Inter-Agency Space Debris Coordination Committee*

- IADC Space Debris Mitigation Guidelines, last revised June 2021, IADC-02-01 Rev. 3.
- Support to the IADC Space Debris Mitigation Guidelines, last revised June 2021, IADC-04-06 Rev. 5.8.
- IADC Statement on Large Constellations of Satellites in Low Earth Orbit, last revised July 2021, IADC-15-03 Rev. 1.1.
- IADC Report on the Status of the Space Debris Environment, published January 2023, IADC-23-01.
- IADC Statement on Active Debris Removal, published December 2022, IADC-22-02.

### 2 *International Organization for Standardization*

- ISO 24113 “Space Systems — Space Debris Mitigation Requirements”, last updated May 2023.
- ISO 24330 “Space Systems — Rendezvous and Proximity Operations (RPO) and On Orbit Servicing (OOS) — Programmatic Principles and Practices”, published July 2022.

### 3 *International Telecommunication Union*

- Environmental protection of the geostationary-satellite orbit, approved 17 December 2010, Recommendation ITU-R S.1003.2 (12/2010).

### 4 *European Space Agency*

- Space Debris Mitigation Policy, issued 3 November 2023, ESA/ADMIN/IPOL(2023)1.
- ESA’s Annual Space Environment Report 2023, issued 12 September 2023.

## V Books

- Byers M. & Boley A., *Who Owns Outer Space? International Law, Astrophysics, and the Sustainable Development of Space* (Cambridge University Press 2023)
- Cheng B., *Studies in International Space Law* (Clarendon Press 1997)
- Crawford J. & Brownlie I., *Brownlie’s principles of public international law* (Oxford University Press 2019)
- Dupuy P.-M. & Viñuales J. E., *International environmental law* (2<sup>nd</sup> ed., Cambridge University Press 2018)
- Gardiner R., *Treaty interpretation* (2<sup>nd</sup> ed., Oxford University Press 2015)
- Grieco J. M., Ikenberry G. J., & Mastanduno M., *Introduction to International Relations: Perspectives, Connections, and Enduring Questions* (2<sup>nd</sup> ed., Red Globe Press 2019)

- Hobe S., Schmidt-Tedd B. & Schrogl K.-U. (eds.), *Cologne Commentary on Space Law* Vol. 1 (Heymanns 2009)
- Hobe S., Schmidt-Tedd B. & Schrogl K.-U. (eds.), *Cologne Commentary on Space Law* Vol. 2 (Heymanns 2013)
- Hobe S., Schmidt-Tedd B. & Schrogl K.-U. (eds.), *Cologne Commentary on Space Law* Vol. 3 (Heymanns 2015)
- Jakhu R. S. & Joseph N. P., (eds.), *Global Space Governance: an international study* (Springer, 2017)
- Lachs M., *The Law of Outer Space: An Experience in Contemporary Law-Making* (Sijthoff 1972/Brill 2010)
- Lyall F. & Larsen, P. B., *Space Law – A Treatise* (2<sup>nd</sup> ed., Routledge 2018)
- Marboe I. (ed.), *Soft law in Outer Space: The Function of Non-Binding Norms in International Space Law* (Böhlau Verlag 2012)
- Masson-Zwaan T. L., *Widening the Horizons of Outer Space Law* (Leiden University 2023)
- Masson-Zwaan T. L. & Hofmann, M., *Introduction to Space Law* (4<sup>th</sup> ed., Kluwer 2019)
- Rose C. et al., *An Introduction to Public International Law* (Cambridge University Press 2022)
- Sands P., Peel J., Fabra A. & MacKenzie R., *Principles of International Environmental Law* (4<sup>th</sup> ed., Cambridge University Press 2018)
- Schmitt M. N. (ed.), *Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations* (Cambridge University Press 2017)
- Schrogl K. U., Jorgenson C., Robinson J., & Soucek A. (eds.), *Space Traffic Management: Towards a Roadmap for Implementation* (IAA 2018)
- Stubbe, P., *State Accountability for Space Debris: A Legal Study of Responsibility for Polluting the Space Environment and Liability for Damage Caused by Space Debris* (Brill 2017)
- Tronchetti F., *Fundamentals of Space Law and Policy* (Springer 2013)
- Truxal S. *Economic and Environmental Regulation of International Aviation: From Inter-national to Global Governance* (Routledge 2017)
- Viikari L., *The Environmental Element in Space Law: Assessing the Present and Charting the Future* (Brill Nijhoff 2008)
- Villiger M. E., *Commentary on the 1969 Vienna Convention on the Law of Treaties* (Brill 2009)
- Von der Dunk F. G. & Tronchetti F. (eds.), *Handbook of Space Law* (Edward Elgar 2015)
- Von der Dunk F. G., *Advanced Introduction to Space Law* (Edward Elgar 2020)

## VI Articles and Book Chapters

- Abbott K. W., Keohane R. O., Moravcsik A., Slaughter A. M., & Snidal D., 'The Concept of Legalization', *International Organization* 54(3) (2000) 401-419.
- Adilov N., Alexander P. J., & Cunningham B. M., 'The Economics of Orbital Debris Generation, Accumulation, Mitigation, and Remediation', *Journal of Space Safety Engineering* 450-447 : (2020) (3)7.
- Aglietti G. S. et al. 'RemoveDEBRIS: An In-Orbit Demonstration of Technologies for the Removal of Space Debris', *The Aeronautical Journal* 124(1271) (2020) 1-23.



- Alby F. et al. 'The European Space Debris Safety and Mitigation Standard', *Advances in Space Research* 1263-1260 (2004) (5)34
- Aoki S., 'The Function of 'Soft Law' in the Development of International Space Law', Marboe I. (ed.), *Soft Law in Outer Space: The Function of Non-binding Norms in International Space Law* (Böhlau Verlag 2012) 57-85
- Azcárate Ortega A. & Lagos Koller H., 'The Open-Ended Working Group on Reducing Space Threats Through Norms, Rules and Principles of Responsible Behaviours: The Journey So Far, and the Road Ahead', *Air and Space Law* 48(Special) (40-19) (2023)
- Baker H. A., 'Protection of the Outer Space Environment: History and Analysis of Article IX of the Outer Space Treaty', *Annals of Air and Space Law* 12 (1987) 143-173
- Balsiger J., 'Logic of Appropriateness', *Encyclopedia Britannica* (2014)
- Biesbroek R., Aziz S., Wolahan A., Cipolla S. F., Richard-Noca M., & Piguet L., 'The clearspace-1 mission: ESA and ClearSpace Team up to Remove Debris', *Proceedings of 8th European Conference on Space Debris* (2021) 1-3
- Bittencourt Neto O. de O., 'Chasing Ghost Spaceships: Law of Salvage as Applied to Space Debris', *Proceedings of the International Institute of Space Law 2014* (Eleven Publishing 2015) 153-162
- Blokker N. M. & Dam-de Jong D. A., 'Law on the Use of Force', Rose C. et al. *An Introduction to Public International Law* (Cambridge University Press 2022) 208-229
- Blount P. J., 'On-Orbit Servicing and Active Debris Removal: Legal Aspects', Nakarada Pecujlic A. & Tugnoli M. (eds.). *Promoting Productive Cooperation Between Space Lawyers and Engineers* (IGI Global 2019) 179-192
- Blount P. J., 'Peaceful Uses of Outer Space', in Masson-Zwaan T. L. & Hofmann, M., *Introduction to Space Law* (4<sup>th</sup> ed., Kluwer 2019) 65-77
- Blount P. J., 'Space Traffic Management: Standardizing On-orbit Behavior', *American Journal of International Law* 124-120 (2019) 113
- Brachet G., 'The Origins of the "Long-term Sustainability of Outer Space Activities" Initiative at UN COPUOS', *Space Policy*, 28(3) (2012) 161-165
- Brunnée, J., 'Harm Prevention', in Rajamani L. & Peel J. (ed.), *The Oxford Handbook of International Environmental Law* (2<sup>nd</sup> ed., Oxford University Press 2021) 269-284
- Brünner C. & Königsberger G., 'Regulatory Impact Assessment' – A Tool to Strengthen Soft Law Regulations', Marboe I. (ed.), *Soft Law in Outer Space: The Function of Non-binding Norms in International Space Law* (Böhlau Verlag 2012) 87-97
- Byers M., Wright E., Boley A., & Byers C., 'Unnecessary Risks Created by Uncontrolled Rocket Reentries', *Nature Astronomy* 1097-1093 (2022) (9)6.
- Carpanelli E. & Cohen B., 'Interpreting "Damage Caused by Space Objects" under the 1972 Liability Convention', *Proceedings of the International Institute of Space Law 2013* (Eleven Publishing 2014) 29-46
- Carus W. S. 'Defining "Weapons of Mass Destruction"', *Center for the Study of Weapons of Mass Destruction*, Occasional Paper 8 (National Defense University Press 2012) 1-91
- Chatterjee J., 'Legal Issues Relating to Unauthorised Space Debris Remediation', *Proceedings of the International Institute of Space Law 2014* (Eleven Publishing 2015) 13-34

- Cheng B., ‘Article VI of the 1967 Space Treaty Revisited – ‘International Responsibility’, ‘National Activities’, and ‘the Appropriate State’’, *Journal of Space Law* 32-7 (1998) (1)26
- Chung G., ‘Jurisdiction and Control Aspects of Space Debris Removal’, Froehlich A. (ed.), *Space Security and Legal Aspects of Active Debris Removal* (Springer (2019) 47-31
- Dam-de Jong D. A., ‘International Environmental Law’, Rose C. et al. *An Introduction to Public International Law* (Cambridge University Press 2022) 322-343
- Dobos B. & Prazak J., ‘To Clear or to Eliminate? Active Debris Removal Systems as Antisatellite Weapons’, *Space Policy* 223-217 (2019) 47.
- Druzin B. H., ‘Why Does Soft Law Have any Power anyway?’, *Asian Journal of International Law* 7(2) (2017) 361-378
- Dupuy P. M., ‘Soft Law and the International Law of the Environment’, *Michigan Journal of International Law* 12(2) (1991) 420-435
- Dural, S., Tugcular, U., & Daser, B., ‘General Collision Avoidance Maneuver Decision Algorithm’, *Proceedings of 8<sup>th</sup> European Conference on Space Debris* (2021) 1-8
- Fitzmaurice M., ‘Treaties’, *Max Planck Encyclopedia of Public International* (2021)
- Force M. K., ‘When the Nature and Duration of Space Becomes Appropriation: “Use” as a Legal Predicate for a State’s Objection to Active Debris Removal’, *Proceedings of the International Institute of Space Law 2013* (Eleven Publishing 2014) 405-420
- Freeland S., ‘The Role of ‘Soft Law’ in Public International Law and its Relevance to the International Legal Regulation of Outer Space’, Marboe I. (ed.), *Soft Law in Outer Space: The Function of Non-binding Norms in International Space Law* (Böhlau Verlag 2012) 9-30
- Frigoli M., ‘Between Active Debris Removal and Space-Based Weapons: A Comprehensive Legal Approach’, Froehlich A. (ed.), *Space Security and Legal Aspects of Active Debris Removal* (Springer 70-49 (2019
- Froehlich A., ‘The Right to (Anticipatory) Self-Defence in Outer Space to Reduce Space Debris’, Froehlich A. (ed.), *Space Security and Legal Aspects of Active Debris Removal* (Springer 92-71 (2019
- Gable K. A., ‘Rules Regarding Space Debris: Preventing a Tragedy of the Commons’, *Proceedings of the 50<sup>th</sup> Colloquium on the Law of Outer Space* (AIAA 2008) 257-266
- Galloway E., ‘Nuclear Powered Satellites: The U.S.S.R. Cosmos 954 and the Canadian Claim’, *Akron Law Review* 12(3) (1979) 401-415
- Hall R. C., ‘Comments on salvage and removal of man-made objects from outer space’, *Journal of Air Law and Commerce* 313-288 (1967) (2)33
- Herdegen M., ‘Interpretation in International Law’, *Max Planck Encyclopedia of Public International* (2020)
- Hobe S., ‘Environmental protection in outer space: Where we stand and what is needed to make progress with regard to the problem of space debris’, *Indian Journal of Law and Technology* 10-1 (2012) (1)8
- Jankowitsch, P. The Outer Space Treaty: Its First Fifty Years. *Proceedings of the International Institute of Space Law 2017* (Eleven Publishing 2018) 3-14
- Johnson N., ‘Origin of the Inter-Agency Space Debris Coordination Committee’, *Orbital Debris Quarterly News* 16(4) (2012) 3-4.

- Kato A., Lazare B., Oltrogge D., & Stokes P. H., 'Standardization by ISO to Ensure the Sustainability of Space Activities', *Proceedings of the 6<sup>th</sup> European Conference on Space Debris* (2013) 1-8
- Kessler D. J. & Cour-Palais B. G., 'Collision Frequency of Artificial Satellites: The Creation of a Debris Belt', *Journal of Geophysical Research: Space Physics*, 83(A6) (1978) 2637-2646
- Koch F. 'The Value of Space Debris', *Proceedings of 8<sup>th</sup> European Conference on Space Debris* (2021) 1-5.
- Krag H., 'A Sustainable Use of Space', *Science*, 373:6552 (2021) 259-259.
- Larsen, P. B., 'Solving the Space Debris Crisis', *Journal of Air Law and Commerce* 519-475 (2018) (3)83
- Lee R. J. & Freeland S. R., 'The Crystallisation of General Assembly Space Declarations into Customary International Law', *Proceedings of the 46<sup>th</sup> Colloquium on the Law of Outer Space* (AIAA 2004) 122-130
- Lewis, H. G., 'Evaluation of Post-Mission Disposal Options for a Large Constellation', *Journal of Space Safety Engineering* 7(3) (2020) 192-197
- Liou J.-C., 'An Active Debris Removal Parametric Study for LEO Environment Remediation', *Advances in Space Research* 1876-1865 (2011) (11)47.
- Liou J.-C., 'Active Debris Removal and the Challenges for Environment Remediation', *28<sup>th</sup> International Symposium on Space Technology* (2012) 1-6
- Liou J.-C., 'Engineering and Technology Challenges for Active Debris Removal', *Progress in Propulsion Physics* 4 (2013) 735-748
- Liou J.-C., Kieffer M., Drew A., & Sweet A., 'Project Review: The 2019 U.S. Government Orbital Debris Mitigation Standard Practices', *Orbital Debris Quarterly News* 24(1) (2020) 4-8
- Losekamm M. J., 'On-Orbit Servicing and Active Debris Removal: Technical Aspects', Nakarada Pecujlic A. & Tugnoli M. (eds.). *Promoting Productive Cooperation Between Space Lawyers and Engineers* (IGI Global 2019) 144-178
- Marchisio, S., 'Article IX', Hobe S., Schmidt-Tedd B. & Schrogl K.-U. (eds.) *Cologne Commentary on Space Law, Volume I* (Heymanns 2009) 169-182
- Martinez P., 'Development of an international compendium of guidelines for the long-term sustainability of outer space activities', *Space Policy* 17-13 (2018) 43.
- Martinez P., 'The Role of Soft Law in Promoting the Sustainability and Security of Space Activities', *Journal of Space Law*, 44(2) (2020) 522-564
- Martinez P., 'The UN COPUOS Guidelines for the Long-Term Sustainability of Outer Space Activities', *Journal of Space Safety Engineering* 107-98 (2021) (1)8.
- Masson-Zwaan T. L., 'Space law and the Satellite Collision of 10 February 2009', *COSPAR's Information Bulletin: Space Research Today* 174 (2009) 4-11
- Masson-Zwaan T. L., 'Legal Aspects of Space Debris', Bonnal C. and McKnight D. S. (eds.) *IAA Situation Report on Space Debris* (IAA 2017) 139-147
- May C. R., 'Game Changer: Triggers and Effects of an Active Debris Removal Market', *The Aerospace Corporation* (2021) 1-11
- McKnight, D. et al., 'Identifying the 50 Statistically-Most-Concerning Derelict Objects in LEO', *Acta Astronautica* 291-282 (2021) 181
- Mejía-Kaiser M., 'Out into the Dark: Removing Space Debris from the Geostationary Orbit-Revised', *Proceedings of the International Institute of Space Law 2019* (Eleven Publishing 2020) 516-527
- Oltrogge D. L., Alfano S., Law C., Cacioni A., & Kelso T. S., 'A Comprehensive Assessment of Collision Likelihood in Geosynchronous Earth Orbit', *Acta Astronautica* 345-316 (2018) 147

- Owley J., Ibrahim I. A., & Maljean-Dubois S., 'The Paris Agreement Compliance Mechanism: Beyond COP 26', *Wake Forest Law Review Online* 11 (2021) 147-160
- Palmisano G., 'Fault', *Max Planck Encyclopedia of International Law* (2007)
- Palmroth M., Tapio J., Soucek A., Perrels A., Jah M., Lönnqvist M., Nikulainen M., Piauokaite V., Seppälä T., & Virtanen J., 'Toward Sustainable Use of Space: Economic, Technological, and Legal Perspectives', *Space Policy* 57: 101428 (2021) 1-12
- Panahy D. A., 'The Space Law Review: USA', in Wheeler J. (ed.), *The Space Law Review* (4th ed., The Law Review 2023)
- Pascual-Vives F., 'Evolutive Interpretation as a Method of Interpretation in Public International Law', *Consensus-Based Interpretation of Regional Human Rights Treaties* (Brill Nijhoff 2019) 73-94
- Perek L., 'Space Debris at the United Nations', *Space Debris* 2(2) (2002) 123-136
- Perek L., 'Ex Facto Sequitur Lex: Facts Which Merit Reflection in Space Law in Particular with Regard to Registration and Space Debris Mitigation', Benkö M. & Schrogl K. U. (eds.), *Space Law: Current Problems and Perspectives for Future Regulation* (Eleven Publishing 2005) 29-46
- Popova R. & Schaus V. 'The Legal Framework for Space Debris Remediation as a Tool for Sustainability in Outer Space', *Aerospace* 17-1 (2018) (2)5
- Pronto A. N., 'Understanding the Hard/Soft Distinction in International Law', *Vanderbilt Journal of Transnational Law* 48 (2015) 941-956
- Salmeri A., 'Developing and Managing Moon and Mars Settlements in Accordance with International Space Law', *Proceedings of the 71st International Astronautical Congress, IAC-20, E7.2,x55609* (2020)
- Sarah M., 'The Legality and Implications of Intentional Interference with Commercial Communication Satellite Signals', *International Law Studies* 90 (2014) 103-197
- Schladebach M., 'Space Debris as a Legal Challenge', *Max Planck Yearbook of United Nations Law Online* 2013) (1)17) 61-85
- Schrijver N., 'Chapter 15: Law of the Sea', Rose C. et al. *An Introduction to Public International Law* (Cambridge University Press 2022) 299-321
- Slaughter A. M. & Hale, T., 'International Relations, Principal Theories', *Max Planck Encyclopedia of Public International Law* (2011)
- Soucek A. & Tapio J., 'National Implementation of Non-Legally Binding Instruments: Managing Uncertainty in Space Law?', *Air and Space Law* 44(6) (2019) 565-582
- Stokes H. et al., 'Evolution of ISO's Space Debris Mitigation Standards', *Journal of Space Safety Engineering* 331-325 (2020) (3)7.
- Su J., 'Active Debris Removal: Potential Legal Barriers and Possible Ways Forward', *Journal of East Asia and International Law* 426-403 (2016) (2)9
- Suchantke I., Letizia F., Braun V., & Krag H., 'Space Sustainability in Martian Orbits — First Insights in a Technical and Regulatory Analysis', *Journal of Space Safety Engineering* 446-439 (2020) (3)7
- Tallis J., 'Remediating Space Debris: Legal and Technical Barriers', *Strategic Studies Quarterly* 1)9) (2015) 86-99
- Tanaka Y., 'Reflections on Time Elements in the International Law of the Environment', *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht* (2013) 73 175-139

- Undseth M., Jolly C., & Olivari M., 'Space Sustainability: The Economics of Space Debris in Perspective', *OECD Science, Technology and Industry Policy Papers* 87 (OECD Publishing 2020) 1-63
- Van den Driest S., 'Chapter 3: Subjects, Statehood, and Self-Determination', Rose C. et al. *An Introduction to Public International Law* (Cambridge University Press 2022) 35-55
- Vedda J. A., 'Orbital Debris Remediation Through International Engagement', *The Aerospace Corporation* (2017) 1-9
- Von der Dunk F. G., 'Too-Close Encounters of the Third Party Kind: Will the Liability Convention Stand the Test of the Cosmos 2251-Iridium 33 Collision?', *Proceedings of the International Institute of Space Law 2009* (AIAA 2010) 199-209
- Von der Dunk F. G., 'The Origins of Authorisation: Article VI of the Outer Space Treaty and International Space Law', *National space legislation in Europe* (Brill Nijhoff 2011) 3-28
- Von der Dunk F. G., 'Contradictio in Terminis or Realpolitik? A Qualified Plea for a Role of 'Soft Law' in the Context of Space Activities', Marboe I. (ed.), *Soft Law in Outer Space: The Function of Non-binding Norms in International Space Law* (Böhlau Verlag 2012) 31-56
- Walt S. M., 'International Relations: One World, Many Theories', *Foreign Policy* (1998) 29-46
- Wang G., 'The Jurisdiction of Space Debris and the Legal Basis of Active Space Debris Removal', *Journal of Beijing Institute of Technology: Social Sciences Edition* 16(6) (2014) 103-110
- Way T. & Koller J., 'Active Debris Removal: Policy and Legal Feasibility', *The Aerospace Corporation* (2021) 1-12
- Weeden B., 'Overview of the Legal and Policy Challenges of Orbital Debris Removal', *Space Policy* 27(1) (2011) 38-43
- Weeden B. & Chow T., 'Taking a Common-Pool Resources Approach to Space Sustainability: A Framework and Potential Policies', *Space Policy* (2012) (3)28 172-166
- Weeden C. et al., 'Development of Global Policy for Active Debris Removal Services', *First International Orbital Debris Conference* (2019) 1-8
- Wessel B., 'The Rule of Law in Outer Space: The Effects of Treaties and Nonbinding Agreements on International Space Law', *Hastings International and Comparative Law Review* 322-289 (2012) (2)35
- Wheeler J., 'The Space Law Review: United Kingdom', in Wheeler J. (ed.), *The Space Law Review* (4<sup>th</sup> ed., The Law Review 2023)
- Wilde M., Harder J., & Stoll, E., 'On-orbit Servicing and Active Debris Removal: Enabling a Paradigm Shift in Spaceflight', *Frontiers in Robotics and AI* 6:136 (2019) 1-2
- Yakovlev M., 'The "IADC Space Debris Mitigation Guidelines" and Supporting Documents', 4<sup>th</sup> *European Conference on Space Debris* (7-1 (2005
- Yamamoto T. et al., 'Pave the Way for Active Debris Removal Realization: JAXA Commercial Removal of Debris Demonstration (CRD2)', *Proceedings of 8<sup>th</sup> European Conference on Space Debris* (2021) 1-8
- Zannoni D., 'Out of Sight, Out of Mind? The Proliferation of Space Debris and International Law', *Leiden Journal of International Law* 314-295 (2022) (2)35
- Zhao Y. & Jiang S., 'Armed Conflict in Outer Space: Legal Concept, Practice and Future Regulatory Regime', *Space Policy* 59-50 (2019) 48

## VII Reports and Studies:

- National Research Council, '*Limiting Future Collision Risk to Spacecraft: An Assessment of NASA's Meteoroid and Orbital Debris Programs*', The National Academies Press (2011)
- Pulliam W., '*Catcher's Mitt Final Report of DARPA*', DARPA (2011)
- NASA Office of Inspector General, '*NASA's Efforts to Mitigate the Risks Posed by Orbital Debris*', Report No. IG-21-011 (27 January 2021).
- Shadbolt L., '*Technical Study Space Debris*', HDI Global Specialty SE (2023).

## VIII News and Websites

- Astroscale, '*Astroscale Selected as Contract Partner for Front-Loading Technology Study in Phase II of JAXA's Commercial Removal of Debris Demonstration Project*' (22 August 2022)
- Bank of America, '*The New Space Era: Expansion of the Space Economy*' (27 January 2023)
- Bartels M., '*Space Debris Forces Astronauts on Space Station to Take Shelter in Return Ships*' (*Space.com*, 16 November 2021)
- Canadian Space Agency, '*Lucky strike: Canadarm2 Stays the Course after an Orbital Debris Hit*' (28 May 2021)
- Choudhury S. R., '*Space Junk is a Big Problem and it's Going to Get Worse*' (CNBC, 18 September 2018)
- Cohen R. S., '*What's a Space Weapon? The Answer Can Be Complicated*'. (*Air & Space Force Magazine*, 28 May 2020)
- CONFERS, '*News Letter: From the Desk of the Executive Director*' (2<sup>nd</sup> Quarter 2019)
- CONFERS, '*News Letter: Updates on ISO Draft Standard on Commercial Satellite Servicing*' (1<sup>st</sup> Quarter 2020)
- Datta A., '*Op-ed | Damage to Canadarm2 on ISS Once Again Highlights Space Debris Problem*', (*SpaceNews*, 3 June 2021)
- ESA, '*Frequently Asked Questions on Space Debris*' (Updated April 2021)
- ESA, '*First Leap for Beam-Hopping Constellation*' (24 May 2021)
- ESA, '*Space Sustainability Rating to Shine Light on Debris Problem*' (17 June 2021)
- ESA, '*ESA Announces the Zero Debris Charter Initiative*' (22 June 2023)
- ESA, '*Space Debris by the Numbers*' (last updated on 11 August 2023)
- ESA, '*World-First Zero Debris Charter Open for Registration*' (6 November 2023)
- Euroconsult, '*Value of Space Economy Reaches \$424 Billion in 2022 Despite New Unforeseen Investment Concerns*' (9 January 2023)
- Foust J., '*A Small Ban of ASATs, A Giant Leap for Space Security?*' (*The Space Review*, 25 April 2022)
- Foust J., '*Senate Passes Orbit Debris Cleanup Bill*' (*SpaceNews*, 23 December 2022)
- Foust J., '*ESA Seeks Global Adoption of "Zero Debris" Policy*' (*SpaceNews*, 20 January 2023)
- Foust J., '*Updated Space Safety Document Outlines Rules of the Road for Avoiding Collisions*' (*SpaceNews*, 5 April 2023)

- FCC, 'News Release: FCC Updates Satellite Orbital Debris Mitigation Rules' (23 April 2020)
- FCC, 'Mitigation of Orbital Debris in the New Space Age, Report and Order and Further Notice of Proposed Rulemaking' (24 April 2020)
- FCC, 'Facilitating Capabilities for In-space Servicing, Assembly, and Manufacturing' (8 August 2022)
- Henry C., 'Astroscale Wins First Half of JAXA Debris-Removal Mission' (*SpaceNews*, 12 February 2020)
- ISRO, 'Current Space Situation around the Moon – An Assessment' (8 August 2023)
- Jakhu R. S. & Ahmad M. T., 'The Outer Space Treaty and States' Obligation to Remove Space Debris: a US Perspective' (*The Space Review*, 13 November 2017)
- Jones A., 'First Satellite for Chinese G60 Megaconstellation Rolls off Assembly Line' (*SpaceNews*, 29 December 2023)
- Jones A., 'NASA Researchers Get Permission to Apply for China's Moon Samples' (*SpaceNews*, 1 December 2023)
- Jones A., 'China's Shijian-21 Towed Dead Satellite to a High Graveyard Orbit' (*SpaceNews*, 27 January 2022)
- Kopal V., 'Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies' (*United Nations*, 2008).
- Kramer M., 'As Space Fills with Satellites, Operators Want to Create Rules of the Road', *Axios Space* (11 April 2023)
- Listner M., 'Iridium 33 and Cosmos 2251 Three Years Later: Where are We Now?' (*The Space Review*, 13 February 2012)
- Maljean-Dubois S., Ibrahim I., & Owley J., 'The Paris Agreement Compliance Mechanism: Beyond COP 26' (*Wake Forest Law Review Online* 2021)
- Marshall W. & Hadfield C., 'Why the U.S. and China Should Collaborate in Space' (*Time*, 15 April 2021)
- Masson-Zwaan T. L., 'Sustainability in Space' (*Leiden Law Blog*, 19 January 2021).
- Micco F., 'Space Sustainability Rating is Now Live' (*SSR News*, 23 June 2022)
- Northrop Grumman, 'News Releases: Successful Docking Paves the Way for Future On-Orbit and Life-Extension Services through Robotics' (12 April 2021)
- NASA, 'Space Debris and Human Spaceflight' (26 May 2021)
- Parker S., 'A New Rating for Space Sustainability' (*SSR News*, 12 September 2022).
- Pultarova T. & Howell E., 'Starlink Satellites: Everything you Need to Know about the Controversial Internet Megaconstellation' (*Space.com*, 3 August 2023).
- Rainbow J., 'Getting SSA off the Ground' (*SpaceNews*, 17 June 2022).
- Robinson T., 'Space Debris: The Legal Issues' (*Royal Aeronautical Society*, 3 January 2014)
- Smith R., 'Northrop Grumman: Top Dog and First Mover in Satellite Repair' (*The Motley Fool*, 9 September 2020)
- SWF, 'Insight – Satellite Servicing Standards and Policy: A Progress Report' (12 September 2022)
- The Aerospace Corporation, 'Space Debris and Space Traffic Management' (14 November 2018)
- The New Humanitarian, 'Interview with Nobel Prize Winner Elinor Ostrom on Climate Change' (25 April 2012)

- UN Climate Change, 'Paris Agreement Implementation and Compliance Committee Meets to Assess Challenges' (30 March 2022)
- UN Climate Change, 'Press Release: Climate Plans Remain Insufficient: More Ambitious Action Needed Now' (26 October 2022)
- UK Space Agency, 'G7 Nations Commit to the Safe and Sustainable Use of Space' (*GOV.UK*, 13 June 2021)
- UK Space Agency, 'Press Release: UK Working with Global Partners to Clear up Dangerous Space Debris' (*GOV.UK*, 26 October 2021).
- UK Space Agency, 'UK Builds Leadership in Space Debris Removal and In-Orbit Manufacturing with National Mission and Funding Boost' (*GOV.UK*, 26 September 2022)
- Werner D., 'Will Megaconstellations Cause a Dangerous Spike in Orbital Debris?' (*SpaceNews*, 15 November 2018)