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'Active non-alignment' in outer space: Brazil's hedging strategy in the Sino-American space race

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journals.sagepub.com/home/ire**Luis da Vinha** 

De Montfort University

Vinicius Guedes Gonçalves de Oliveira 

Flinders University

Abstract

The emerging rivalry between the U.S. and China is poised to be the most significant factor shaping international politics in the coming decades. As both great powers aim to safeguard and advance their national interests, research has largely focused on how this rivalry will impact regional dynamics on Earth. However, outer space – due to its critical security and economic significance – will also be a key stage of this geopolitical rivalry. Brazil, with its unique geographic position, long-standing engagement in space activities, and political ambition to become a leading space actor, is positioned as a significant player in South America. Despite its historical relationships with both the U.S. and China in the development of its space program, the intensifying Sino-American rivalry is polarizing the geopolitical landscape. In response, Brazil has adopted a policy of 'active non-alignment' as a hedging strategy. This approach allows Brazil to navigate the growing polarization by maintaining strategic flexibility, minimizing risks, and maximizing opportunities, while seeking to establish itself as a leading space power in South America. This paper explores how Brazil's 'active non-alignment' embodies the core principles of hedging in the context of the Sino-American rivalry in outer space.

Keywords

active-nonalignment, hedging, international rivalry, space policy, space race

Corresponding author:

Luis da Vinha, Faculty of Technology, Arts & Culture, De Montfort University, Gateway House, Leicester LE1 9BH, UK.

Email: luis.davinha@dmu.ac.uk

Introduction

The 21st century has ushered in a renewed era of great power rivalry between the United States (U.S.) and China. This rivalry, manifested across a wide range of domains has increasingly extended into outer space.¹ Space has emerged as a strategically vital domain with profound implications for national security, economic development, and technological competition. While the geopolitical rivalry between the U.S. and China is primarily concentrated in the Indo-Pacific and other regions, the competition for primacy in outer space carries global significance. Space-based assets, such as satellites and communication systems, form the backbone of modern civilian and military infrastructure, underscoring the importance of dominance in this domain. The militarization and commercialization of space have, therefore, become integral components of the strategic objectives of both Washington and Beijing, as they seek to enhance their own capabilities and shape global space governance.² Historically, such rivalries have also been characterized by coalition-building efforts aimed at consolidating influence and extending geopolitical power, a pattern likely to persist in the space domain.³

Within this broader context, Brazil emerges as a key actor in South America. Although traditionally regarded as a regional power with limited global influence, Brazil's strategic geographic location, deep-rooted involvement in space activities, and ambitions to establish itself as the leading regional space power have elevated its significance in the global space race.⁴ Brazil's engagement in space activities spans several decades, marked by notable collaborations with both the U.S. and China. However, as the U.S. and China endeavor to shape the future of space governance and technology through coalitions that consolidate their leadership, Brazil must navigate an increasingly polarized geopolitical environment. In this context, President Luiz Inácio Lula da Silva's recent foreign policy initiatives aim to depart from traditional approaches to great power dynamics. Lula da Silva has explicitly articulated a vision for Brazil to 'balance world geopolitics',⁵ reflecting a broader aspiration for strategic autonomy.

This paper analyses how Brazil seeks to assert itself as the leading power in South America's nascent space sector amid intensifying global rivalry. It makes a contribution to both the academic and policy-oriented literature on space politics by shifting analytical focus away from the dominant preoccupation with great power rivalry and toward the underexplored role of middle and regional powers in the space sector – particularly in the Global South. While much of the existing literature has analyzed the strategic ambitions of the U.S. and China in outer space, relatively little attention has been paid to how other actors navigate this increasingly contested domain. By examining Brazil's evolving space policy, the paper addresses this gap and illustrates how a regional power can exercise agency amid intensifying geopolitical rivalry. Contrary to the widespread assumption that small and middle powers must align with one of the major blocs, the case of Brazil demonstrates that such states are capable of adopting nuanced and dynamic foreign policy strategies that preserve autonomy while leveraging cooperation with both rivals. Specifically, the article highlights how Brazil's approach – framed through a policy of 'active non-alignment' and operationalized via a hedging strategy – enables it to engage productively with both the U.S. and China to advance its space capabilities without becoming subordinated to either. As such, the paper offers both theoretical insights

into alignment strategies under conditions of multipolar rivalry and practical lessons for policymakers in similar contexts of geopolitical uncertainty.

The paper is structured as follows. It begins by examining the Sino-American geopolitical rivalry, with particular attention to their competition in space. It proceeds to evaluate Brazil's role as a regional power and its strategic approach to navigating great power tensions. Subsequent sections trace the evolution of Brazil's space policy, emphasizing key initiatives and collaborative ventures with the U.S. and China. The paper also explores the hedging strategy underscoring Brasília's policy of 'active non-alignment' highlighting how Brazil seeks to manage external partnerships while advancing its strategic interests in an era of heightened geopolitical rivalry.

The Sino-American rivalry in space

The contemporary global order is increasingly defined by strategic rivalry, particularly between the U.S. and China.⁶ While great powers are naturally inclined to compete for influence, the current U.S.-China relationship goes beyond conventional competition, evolving into a deeper, more hostile form of rivalry. Unlike structured competition, which operates within established norms and seeks relative gains in areas such as power, security, and status, rivalry is marked by a perception of existential threat and a zero-sum mentality.⁷ In such dynamics, states prioritize undermining their opponent over advancing their own strategic goals, often driven by psychological hostility rather than rational calculation. As policymakers in Washington and Beijing institutionalize this adversarial posture, their interactions increasingly reflect what John Vasquez calls a 'sustained mutually contingent hostile interaction', signaling a shift toward a more volatile and entrenched global rivalry.⁸ As the Sino-American rivalry deepens across political, economic, and technological dimensions, it is now extending into outer space.

The United States has a long and significant history in space exploration, beginning with the 'space race' against the Soviet Union. Initially, the U.S. focused on using space to deploy reconnaissance satellites for gathering intelligence on Soviet activities. Over time, these efforts expanded to include missile warning systems, communication networks, and weather forecasting.⁹ During the Cold War, the U.S. launched several initiatives to assert space as a key military domain, including testing nuclear explosions in space and developing missile defense systems to counter Soviet Intercontinental Ballistic Missiles (ICBMs). After the Cold War, the U.S. remained the world's dominant space power. Key programs such as the space shuttle, the creation of the International Space Station (ISS), and the commercial launch of the Global Positioning System (GPS) underscored the U.S.'s leadership in space.¹⁰

American dominance in space was further demonstrated during operations Desert Shield and Desert Storm, where space assets played a crucial role in aiding conventional forces, leading to a swift and decisive victory.¹¹ Confidence in this superiority throughout the 1990s led the U.S. to support the Russian Space Agency, facilitating collaborations for astronaut flights to the Russian Mir station and on the ISS. Additionally, the U.S. allowed the launch of over two dozen American commercial satellites using Chinese Long March boosters. However, cooperation with China came to an abrupt halt following the 'Cox Report', which accused China of stealing critical U.S. technology and

national security secrets.¹² In response to mounting concerns about emerging space competition, Congress created several commissions. In January 2001, the Commission to Assess National Security Space Management and Organization urged the consolidation of U.S. space agencies to avoid a possible 'Space Pearl Harbor'.¹³ However, after the 9/11 attacks, U.S. security priorities shifted, relegating space to a secondary concern for policymakers.

During this period, China rapidly expanded its space program and began to establish itself as a key space competitor. Since the 1990s, China's security concerns, particularly the military advantages offered by space, pushed it to develop independent space capabilities. Chinese officials believed that the U.S. intended to dominate space and monopolize its resources.¹⁴ Consequently, China significantly increased its investment in defense R&D and updated its military doctrine, prioritizing technological superiority over traditional mass forces.¹⁵ By the mid-2000s, the People's Liberation Army (PLA) had incorporated 'new historic missions', which included advancing China's national interests globally, with space being a crucial domain.¹⁶

Since Xi Jinping's rise to power in 2012, space has become even more central to China's global ambitions. Space is integral to various economic initiatives, such as the 2006–2020 Medium and Long-term Plan for Science and Technology Development, the Made in China 2025 plan, and numerous Five-Year Plans.¹⁷ China has also highlighted the military importance of space in its defense white papers, aiming to become the world's leading space power in the near future.¹⁸ Notably, in 2015, the Chinese military officially designated space as a military domain, aligning its strategy to exploit space in multi-domain warfare.¹⁹

China's political system enables the government to coordinate both civil and military resources toward its goal of becoming the dominant space power by 2045.²⁰ Consequently, China has made significant progress, becoming the second-largest operator of satellites,²¹ establishing its own navigation system (BeiDou), and successfully conducting lunar missions.²² China is also aiming for dominance in areas such as space-based commercial facilities, space power generation, asteroid mining, and space transportation. In addition, it has developed advanced counterspace capabilities, including cyberattacks, electronic warfare, anti-satellite weapons, and attacks on ground infrastructure.²³ More recently, China further narrowed the Sino-American capability gap in space by coordinating the movements of five different satellites, simulating orbital combat, and potentially advancing toward space superiority in the near future.²⁴ Therefore, China is considered one of the top three space powers (alongside the U.S. and Russia), and unlike the U.S., it has greater political flexibility in shaping its space policies.²⁵

The U.S. was slow to respond to China's rapid space advancements. Preoccupied with the 'global war on terror' and embroiled in Middle East conflicts, along with internal political struggles, the U.S.'s space dominance began to decline. According to Richard M. Harrison, Peter A. Garretson, and Anthony Imperato, the U.S. space decline is attributed to 'a persistent lack of political will among U.S. policymaking elites, the absence of a clear and objective goal to accomplish, risk averseness and fear of failure, the substantial cost of space access, and government contractors who are disincentivized, by the bureaucratic and failed acquisition process from developing technology in a timely fashion'.²⁶ Despite recognizing the growing threat posed by China, U.S. actions were limited.

In 2011, the Wolf Amendment, driven by Republican Representative Frank Wolf, restricted NASA and other U.S. agencies from collaborating with China without specific authorization.²⁷ Though the amendment remains in effect, it has not reversed the U.S.'s relative decline in space leadership.

In recent years, however, the U.S. has refocused its attention on space, spurred by national security concerns and commercial interests.²⁸ The Trump administration played a significant role in bringing space back to the forefront of national security. It reestablished the National Space Council in 2017 and introduced an 'America First' National Space Strategy to ensure U.S. space dominance and strengthen military capabilities.²⁹ In 2019, the U.S. created the Space Force as an independent military branch.³⁰ In 2020, the Trump administration released both a National Space Policy³¹ and Defense Space Strategy,³² cementing America's renewed commitment to maintaining its leadership in space. Since then, bipartisan support has emerged to counter the national security threat posed by China's space ambitions.³³ The Biden administration upheld this competitive stance, continuing efforts to assert U.S. dominance in space,³⁴ and Trump's return to the White House promises to make space a national security priority.³⁵

Some experts view space as a possible area for peaceful competition or collaboration between the U.S. and China.³⁶ However, others remain skeptical, warning that competition in space and cyberspace could lead to increased tensions.³⁷ Chinese commentators also see little opportunity for cooperation due to rising conflicts.³⁸ Recent developments have not fostered a cooperative environment. For example, in 2020, President Trump signed Executive Order 13914, declaring that 'Outer space is a legally and physically unique domain of human activity, and the United States does not view it as a global commons'.³⁹ The U.S. has also found it increasingly difficult to advance their interests through the mechanisms of multilateral space governance,⁴⁰ instead promoting the Artemis Accords, which favors bilateral agreements for civil space exploration.⁴¹

While the Artemis Accords have garnered widespread international support, China has firmly rejected them, viewing the initiative as a strategic maneuver to constrain its space ambitions – a stance shaped in part by the restrictions imposed under the U.S. Wolf Amendment.⁴² In response, China has deepened its space cooperation with Russia, engaging in joint ventures spanning ballistic missile defense, satellite navigation, and other strategic domains.⁴³ Central to this cooperation is the International Lunar Research Station (ILRS), which, in contrast to the Artemis framework, adopts a more inclusive approach by inviting participation from all interested states, regardless of their technological or financial standing.⁴⁴ This model is particularly attractive to developing countries, offering capacity-building opportunities such as free access to scientific payloads, data-sharing mechanisms, and an alternative to U.S.-dominated pathways for lunar exploration. Taken together, the Artemis Accords and the ILRS exemplify the intensifying geopolitical rivalry in space, as both the United States and China seek to shape the normative and institutional foundations of a future lunar order.

As the Sino-American rivalry intensifies, both nations are increasingly seeking allies. Pekkanen emphasizes that alliances provide numerous benefits, such as balancing power and resources.⁴⁵ The U.S. has deepened space cooperation through alliances like NATO and the Artemis Accords, and has built new partnerships in Asia and the Middle East.⁴⁶ China, in contrast, has established the Asia-Pacific Space Cooperation Organization to

enhance regional allies' space capabilities and is expanding space cooperation through development programs.⁴⁷ Some believe that this great power rivalry will compel other countries to align with either the U.S. or China.⁴⁸ However, others argue that many nations will pursue overlapping security relationships with both powers to benefit from their competition. Sheena Chestnut Greitens and Isaac Kardon suggest that astute regional and middle powers can capitalize on the U.S.-Chinese security rivalry by reaping benefits from both sides, provided that neither power insists on exclusive arrangements.⁴⁹

Brazil, as South America's leading space power, finds itself at the center of this geopolitical tug-of-war. Although Brazil has historical ties to U.S. space programs and joined the Artemis Program, it was also the first South American nation to partner with China in space. As the U.S.-China rivalry in space intensifies, Brazil must develop a strategy that balances its national interests and ambitions on the global stage.⁵⁰

Brazil's 'active non-alignment'

Unlike great powers, which seek to reshape international order in line with their ideological preferences or domestic interests, regional and middle powers primarily focus on securing autonomy within an anarchic system, allowing them to protect their interests and assert their identities.⁵¹ Some scholars contend that in a bipolar international system, regional powers face greater constraints as rival powers tend to exclude third actors that might disrupt the balance of power.⁵² Furthermore, Håkan Edström and Jacob Westberg argue that as great power rivalries penetrate more deeply into a region, regional powers have fewer options to develop independent strategies.⁵³ In contrast, other scholars underscore the opportunities that periods of international bipolarity can present for regional powers. For example, Saame Kim suggests that the Sino-American rivalry provides regional and middle powers with chances to influence regional and global policy by assuming a more proactive international role.⁵⁴ Additionally, Ahmad Umar argues that regional and middle powers can skillfully navigate great power competition and secure benefits that advance their own policy objectives.⁵⁵

Regardless of which perspective more accurately captures the structural effects on regional politics, a range of alignment strategies can be identified that regional and middle powers can utilize to pursue their goals and interests. In this context, the term alignment 'strategies' refers to the various ways in which a regional power positions itself vis-à-vis the great powers in the international system in order to further its national interests. The regional power's interactions with the great powers are shaped by the degree of convergence or divergence in their interests and alignment on key policy issues.⁵⁶ One of the most common alignment strategies is *balancing*, in which a regional power seeks to prevent a great power from assuming hegemony in its own region. This strategy can take different forms such as building up one's military capabilities and creating or maintaining formal alliances with other regional or international partners (i.e. *hard balancing*) and fostering security cooperation with other states by carrying out joint exercises and/or collaborating in regional and international institutions (i.e. *soft balancing*).⁵⁷ Regional powers tend to adopt a balancing strategy when the perceived threat posed by one of the great powers grows, as does the support from the its rivals.⁵⁸

Another common strategy adopted by regional powers is *bandwagoning*. As Randall Schweller reminds us, whereas a balancing strategy is driven principally by the desire to avoid losses, bandwagoning is driven by the opportunity for gain.⁵⁹ In other words, a regional power may willingly align itself with a great power in order to obtain benefits and rewards from it and advance its political goals in the region and internationally.⁶⁰ Bandwagoning was a common strategy employed by many regional and middle powers after the Cold War as it provided more rewards and was less costly than trying to balance the U.S. in a unipolar system.⁶¹ A less common strategy adopted by regional powers is *distancing* or *hiding* in order to try to avoid any involvement in the great power rivalry.⁶² This strategy is usually employed by regional powers less immediately threatened by the great powers and rests on the assumption that actively engaging with any of the rivals does not contribute to enhancing its national interest and can ultimately be dangerous by provoking one or all the great powers.⁶³

More recently, scholars have increasingly identified regional and middle powers adopting a *hedging* strategy.⁶⁴ Cheng-Chwee Kuik argues that hedging involves insurance-seeking behavior in high-stakes and uncertain environments, where a regional power deliberately adopts ambiguous policies toward the rival great powers.⁶⁵ This strategy aims to maximize benefits from positive relations with the great powers while mitigating long-term risks such as entrapment, abandonment, alienation, and domestic costs. Kuik identifies three inseparable policy elements involved in a hedging strategy: (1) not taking sides among competing powers or fully aligning one's interests and support with another power, (2) adopting opposing and counteracting measures, and (3) using these opposing actions as instruments to preserve gains, while developing a fallback position.⁶⁶

Hedging should not be conflated with neutrality, or with other similar – yet less theoretically developed – concepts such as strategic neutrality. While both hedging and neutrality are strategies employed by states to navigate complex power dynamics and safeguard national interests, they differ significantly in definition, scope, and application. At its core, neutrality refers to the non-participation in armed conflict between other sovereign entities considered legally equal under international law. Accordingly, it constitutes a formal legal status grounded in clearly defined rights and obligations, codified in part by treaties such as the Hague Conventions and further shaped by customary international law.⁶⁷ States claiming neutrality are obligated to prevent belligerents from using their territory for military purposes, to refrain from providing military assistance to any warring party, and to apply the principles of neutrality impartially and without discrimination.⁶⁸ As Leos Müller clarifies, 'Strictly speaking, neutrality does not exist in peacetime'.⁶⁹ When invoked outside its formal legal framework, neutrality typically signifies a passive posture – characterized by reluctance to take sides or form alignments with major powers, and by the absence of deliberate efforts to pursue divergent or opposing policies toward them.⁷⁰

In contrast, hedging represents a broader strategic posture applicable across a range of peacetime contexts marked by great power competition and uncertainty, serving as a means of managing the risks associated with the actions and intentions of major powers. It differs from other alignment strategies by actively pursuing a mix of cooperative and confrontational elements toward different powers simultaneously. More precisely, it combines elements of both accepting and cooperating with a major power (through

selective partnerships, collaboration, or even deference) and resisting or pushing back against that same power (through selective opposition or defiance).⁷¹ In other words, hedging often involves seemingly contradictory policies aimed at both engaging with and insuring against different powers in order to create ‘mutually countervailing effects’ that allow states to mitigate and offset the multiple risks associated with international uncertainty. This means that hedging, by its nature, is a dynamic and evolving strategy, adapting to shifts in the international environment and the behavior of major powers. Accordingly, states adjust their mix of engagement and risk-contingency measures as circumstances change.⁷²

Hedging has become a particularly attractive strategy for regional and middle powers that need to navigate the Sino-American rivalry.⁷³ However, not all regional powers are able to effectively adopt and implement a hedging strategy. As Lee suggests, for hedging strategies to be viable, several key preconditions must be met.⁷⁴ First, a regional power considering a hedging strategy must not be confronted with an imminent threat from rising great powers in its region. In such cases, a regional power under direct threat would be compelled to adopt either a balancing strategy – aligning against the threat – or a bandwagon with the more powerful state to ensure its own survival. Second, the regional security environment should not be primarily driven by ideological confrontation, as was the case during the Cold War, or characterized by a rigid division into blocs or camps. Such ideological or bloc-driven environments limit the space for maneuver and make hedging strategies difficult to sustain. Finally, for a hedging strategy to succeed, the regional security environment must provide sufficient flexibility. If competition between great powers escalates into an intense and uncompromising rivalry, regional powers will have little choice but to align with one side. The absence of such flexibility constrains the ability of regional and medium powers to pursue hedging as a viable strategy.

Like many other regional and middle powers, Brazil seeks to advance its national interests, especially by maintaining autonomy in shaping regional politics and policies. Brazil has intermittently exercised regional leadership over recent decades, as both regional and domestic dynamics have shaped the considerations of policymakers in Brasília.⁷⁵ More specifically, since the second term of Fernando Henrique Cardoso (1999–2003), Brazil has pursued regional leadership through a foreign policy approach of ‘autonomy by engagement’, which was evident in the 2000 South American presidents’ summit that eventually led to the establishment of the Union of South American Nations (UNASUR) in 2008.⁷⁶ This initiative continued under Lula da Silva (2003–2011), who used the South American platform to promote several key international initiatives, most notably becoming a founding member of the BRIC group in 2009. However, this emphasis on regional leadership diminished under the administrations of Dilma Rousseff (2011–2016), Michel Temer (2016–2019), and Jair Bolsonaro (2019–2022), all of whom progressively deprioritized or abandoned this goal.⁷⁷

Although Brazil retained its status as a regional power during this period, the re-election of Luiz Inácio Lula da Silva marked a renewed opportunity for the country to reassert its leadership in the region. Lula’s return to the presidency was driven by a clear intention to depart from his predecessor’s more isolationist foreign policy, aiming instead to restore Brazil’s active engagement on the global stage and reaffirm its role as a significant international actor.⁷⁸ More precisely, Lula sought to embrace multilateralism and

its associated agendas, including the longstanding advocacy for the democratization and reform of institutions such as the United Nations Security Council. This also involved reactivating Brazil's universalist foreign policy approach, characterized by engagement with states across all regions and ideological spectrums. Naturally, this shift entailed a revitalization of presidential diplomacy, with President Lula dedicating substantial time to international travel in order to re-establish dialogue with global leaders and actively participate in a range of multilateral forums and international initiatives.⁷⁹

Accordingly, during the November 2022 COP27 climate summit in Egypt, Lula proclaimed, 'Brazil is back', signaling his intention to adopt a more active approach to global issues such as deforestation, climate change, multilateralism, and the war in Ukraine.⁸⁰ Brazil's status as a regional leader has also been recognized by other international actors. The country participated in the G7 Leaders' Summit in 2023, re-joined UNASUR in May 2023, hosted the 2024 BRICS summit, assumed the presidency of the G20 Summit in 2024, and is set to host COP30 in 2025. Furthermore, President Lula has undertaken a series of high-profile diplomatic engagements, including meetings with U.S. President Joe Biden in September 2023 and Chinese President Xi Jinping in April 2023. He also extended an invitation to Russian President Vladimir Putin to attend the G20 summit in Rio de Janeiro.

Some analysts have criticized Lula's foreign policy, particularly his engagement with authoritarian leaders and his critiques of American global leadership, arguing that this limits Brazil's 'capacity as a bridge-builder and mediator in an environment marked by rising geopolitical turbulence'.⁸¹ Others, however, highlight the pragmatism behind Brazil's policy of 'active non-alignment', which focuses on diversifying partnerships, prioritizing development, and democratizing global governance to amplify Brazil's voice on the world stage.⁸² This approach reflects Lula's broader strategic objective of carefully navigating the geopolitical divide between the West and the Global South, while preserving Brazil's key strategic partnerships – an increasingly pertinent ambition in an era marked by heightened global uncertainty and fragmentation.⁸³

'Active non-alignment' has been endorsed by several analysts as a strategy for South American countries to manage their relationships with both the U.S. and China amid the resurgence of bipolar rivalry. Drawing from the post-war Non-Aligned Movement, which originated at the 1955 Bandung Conference, the current iteration seeks to maximize the region's engagement in global trade, investment, and financial networks, while maintaining the freedom for each country to pursue its own national development strategies. Proponents of this strategy argue that it should foster the creation of democratic and inclusive global governance structures, balancing global interconnectedness with national and regional autonomy. Advocates of 'active non-alignment' encourage South American nations to embrace an agenda that (1) strengthens regionalism, (2) reorients the region's foreign policy to the emerging centers of power (e.g. Asia and Africa), (3) supports new international financial institutions (e.g. Asian Investment and Infrastructure Bank), and (4) avoids being entangled in the Sino-American geopolitical and geo-economic rivalry.⁸⁴

Although 'active non-alignment' has broader historical and conceptual roots that encompass more than purely security concerns,⁸⁵ the recommendations for 'active non-alignment' are closely aligned with the assumptions underscoring a hedging strategy.

Hedging and Brazil's policy of 'active non-alignment' exhibit significant overlap as strategies used by less powerful states to navigate an increasingly complex and multipolar international system.⁸⁶ Both approaches are designed to help states avoid rigid alignment choices between the great powers, allowing them to preserve autonomy in a global arena marked by shifting power dynamics. 'Active non-alignment' seeks to avoid 'total conformity' with any one great power, advocating for a flexible, context-dependent approach to foreign relations.⁸⁷ Similarly, hedging enables states to strike an equilibrium between the extremes of alignment – such as balancing or bandwagoning – by adopting a middle-ground strategy that permits engagement with multiple powers without full commitment to any.⁸⁸ A key similarity between the two approaches is their reliance on strategic ambiguity and calculated contradictions. Both hedging and 'active non-alignment' involve actions that may appear inconsistent, but are intentionally designed to maximize options and flexibility.

Brazil's 'active non-alignment', for instance, involves selectively embracing or rejecting international norms depending on the situation, thus maintaining room for diplomatic maneuvering.⁸⁹ This echoes the logic of hedging, where states might engage economically with one power while simultaneously cooperating on security with another rival, thereby minimizing risk and optimizing benefits.⁹⁰ Moreover, both strategies are geared toward enhancing the agency of less powerful states. They allow such states to carve out greater space for independent action, resisting the pressures imposed by the great powers. Brazil's 'active non-alignment' expands its room for maneuver, enabling the country to pursue its own foreign policy objectives without being locked into rigid alliances.⁹¹ Hedging similarly empowers states to maintain strategic autonomy, ensuring that they do not become overly dependent on any single power.⁹² This increased flexibility and independence allows states to better respond to the uncertainties of the international system, adapting their strategies to evolving geopolitical realities.⁹³

Brazil's response to the Ukraine-Russia war under Lula's third term reflects a broader hedging strategy in its foreign policy, aimed at balancing diverse international priorities. On one hand, Brazil maintains close ties with Russia and China, reinforcing its South-South cooperation and leadership within BRICS. On the other, it has sought to rebuild relations with Western powers, as seen in its support for the UN resolution condemning Russia's invasion. At the same time, Brazil upholds principles of non-intervention and state sovereignty, rejecting arms shipments to Ukraine and criticizing NATO's role in the conflict. Lula's mediation offer further signals Brazil's ambition to position itself as a neutral, influential global actor committed to diplomatic engagement and strategic autonomy.⁹⁴

As Brazil navigates its role in international affairs through policies like 'active non-alignment', the country has also pursued a hedging strategy in space, reflecting its broader foreign policy approach. Over the decades, Brazil has made significant strides in developing its space policy, which not only complements its overarching foreign policy objectives but also positions the country to manage the complexities of great power competition. Brazil's 'active non-alignment' policy, aimed at diversifying partnerships and maintaining autonomy, will most likely be applied to outer space, allowing the country to engage with major space powers without becoming completely aligned with any one actor. This renewed focus on space provides Brazil with an additional avenue to assert its

leadership on the global stage, balancing regional aspirations with international ambitions. The following section explores Brazil's evolving space policy in the context of renewed international rivalry, highlighting how these efforts align with the country's broader geopolitical strategy.

Brazil's space strategy in the face of emerging Sino-American rivalry

It is challenging to identify the exact starting point of Brazil's space history, but 1965 marked a significant milestone with the establishment of Brazil's first launch center, the Barreira do Inferno Launch Centre, in the city of Natal. This development is often recognized as the first substantial institutional effort by the Brazilian government to create a long-term impact in space exploration.⁹⁵ Thus, the early phase of the Brazilian space program dates back to its period of dictatorship (which lasted until 1985), and which was characterized by an automatic strategic alignment with the United States.⁹⁶ During this time, Brazil developed its first satellites, BrasilSat A1 and BrasilSat A2, in collaboration with the U.S. aerospace and defence company Hughes Aircraft and the Canadian company Spar Aerospace.⁹⁷

In the final years of the military dictatorship, Brasília began to adopt a policy of greater national autonomy in its strategic sectors.⁹⁸ Following the end of the dictatorship, the newly established civilian government initiated negotiations with China aimed at advancing cooperation in space exploration. This led to the signing of the Protocol on Research and Production of the Earth Resource Satellite in 1988. The agreement marked the first space technology program between China and another developing nation and represented a pioneering step in establishing China's relationship with South American countries in the space sector.⁹⁹ The program sought to develop two advanced remote sensing satellites, the China-Brazil Earth Resources Satellite (CBERS), with financial and technological contributions from both Brazil and China. Responsibilities were divided such that Brazil contributed 30% and China 70% of the program's total cost, making it a notable example of South-South cooperation.¹⁰⁰ While the joint development of a space technology program with China was complex due to budgetary limitations, Brazil's dependency on costly data from foreign Earth Remote Sensing Satellites, primarily from the United States, and Brasília's political ambitions drove the project forward.¹⁰¹ Moreover, Washington's growing concern over Brazil's missile development program created an opportunity for China to step in as an alternative partner, offering fewer export controls and relatively affordable technologies.¹⁰²

Following initial delays primarily due to budgetary constraints in both countries, Brazil and China successfully launched the first satellite in the CBERS series, CBERS-1, in 1999, followed by CBERS-2 in 2003.¹⁰³ Building on the program's success, the two nations signed a new protocol in 2002, establishing a more comprehensive framework for continued cooperation in space projects and outlining the development of two additional satellites, CBERS-3 and CBERS-4. This phase of the program featured equal financing, with each country contributing 50% of the costs.¹⁰⁴ Although CBERS-3 suffered a launch failure, failing to reach orbit and burning up upon re-entry in 2013,¹⁰⁵

CBERS-4 was successfully launched in 2014 and remains operational, providing Earth remote sensing data for Brazil.¹⁰⁶

It can be argued that this new generation of satellites heightened U.S. concerns regarding the national space strategies of South American countries and their growing international space partnerships.¹⁰⁷ The United States' primary concern lies in China's blurred boundaries between state and private sectors, as well as between civilian and military domains. In this context, much of the technology driving China's space program – including its facilities in South America – is provided by two entities originally formed within the People's Liberation Army: the China Aerospace Science and Technology Corporation and the China Aerospace Science and Industry Corporation. Although these organizations have since been restructured as major state-owned enterprises, they continue to serve as primary suppliers to China's military.¹⁰⁸ From the U.S. perspective, this creates a potential risk that, in the event of conflict, China could use space facilities on South American soil to support military actions against potential U.S. targets.¹⁰⁹

It is crucial to emphasize that the partnership with China, particularly through the CBERS program, was strategically designed to diversify Brazil's international partnerships and reduce its reliance on U.S. technology.¹¹⁰ Despite the growing mistrust between the leading space powers, the U.S. and China, Brazil avoided a full political alignment with both parties. During this period, Brazil continued to adhere to a policy of 'active non-alignment', carefully exploiting its relationships with both global powers. In other words, Brasília employed a hedging strategy by selectively evaluating partnerships that would best support its national interests without committing itself completely to either the U.S. or China.

In fact, throughout the CBERS program, Brazil remained receptive to cooperation with the U.S. For example, by endorsing the non-proliferation regime, Brazil secured a position in NASA's ISS program in 1996.¹¹¹ Furthermore, during the administration of President Jair Bolsonaro (2019–2022), Brazil's foreign policy favored a closer relationship with the U.S. due to Bolsonaro's close relationship with then-U.S. President Donald Trump, especially in space-related collaborations.¹¹² This closer relationship resulted in two key initiatives that strengthened its partnership with the United States in the space sector: Brazil's signing the U.S.-Brazil Technology Safeguards Agreement (TSA) and signing the Artemis Accords.¹¹³ The TSA enables Brazil to launch rockets containing U.S. technology from the Alcântara Launch Centre, which integrates the vast majority of existent rockets, enhancing Brazil's appeal as a space launch site and potentially boosting economic growth and technological progress within its aerospace sector.¹¹⁴ The Artemis Accords, developed by NASA, set out principles for the responsible and transparent exploration of outer space and serve as prerequisites for nations joining the Artemis lunar exploration program.¹¹⁵

In line with its policy of 'active non-alignment', Brasília continues to engage with China to pursue strategic opportunities. Brasília strategically leveraged its partnership with China to advance shared objectives in the satellite sector. During the sixth meeting of the Sino-Brazilian High-Level Commission (COSBAN) in 2022, the vice presidents of Brazil and China underscored their commitment to deepening bilateral space cooperation. They outlined plans for the upcoming Bilateral Cooperation Plan 2023–2032, which aims to strengthen the joint satellite initiatives, and announced the development of two additional satellites, CBERS-5 and CBERS-6, designed to enhance remote sensing capabilities and

environmental monitoring across both countries.¹¹⁶ In the June 2024 COSBAN Plenary Session, Beijing and Brasília further consolidated this collaboration by signing a Joint Declaration of Intent for the development of the CBERS-5 satellite.¹¹⁷ Brazil wants to share the data generated by the satellite with Latin American and Caribbean states, boosting itself as a regional space power by leading the climate predictions in the region.¹¹⁸

Additionally, Brazil and China have further expanded their cooperation by joining Russia, India, and South Africa in establishing the BRICS Joint Committee on Space Cooperation, a pivotal step toward enhanced multilateralism within the BRICS network. This committee is designed to facilitate knowledge exchange, technical collaboration, and the creation of a constellation of Earth Observation satellites intended to support sustainable development, climate monitoring, and disaster response across the BRICS nations.¹¹⁹ Moreover, despite signing the Artemis Accords, Brazil has also expressed interest in the Sino-Russian International Lunar Research Station initiative, a project that, in theory, rivals the Artemis lunar program.¹²⁰

Brazil's hedging strategy in the space sector is not merely a reflection of the political preferences of the incumbent government in Brasília. Rather, the strategy is institutionalized within Brazil's *Programa Nacional de Atividades Espaciais* (PNAE) [National Program for Space Activities] which serves as the principal document for guiding the nation's space policy. The overarching goal of PNAE 2022–2031 is to make Brazil the leading South American country in the space market.¹²¹ This ambition complements the country's broader goal of asserting itself as the undisputed regional power in South America.¹²² To achieve this goal, PNAE 2022–2031 emphasizes that international cooperation in the space sector should be based on joint development and mutual benefit and should take into consideration alternative funding sources, risk and cost sharing, access to new markets, opportunities for technology transfer and acquisition, and the strengthening of strategic geopolitical partnerships.¹²³

In defining Brazil's structural initiatives, PNAE 2022–2031 emphasizes collaboration with the U.S. through the adherence to the Artemis program's rules of good practice, as well as cooperation with the BRICS countries in developing a constellation of remote sensing satellites.¹²⁴ Similarly, PNAE's execution portfolio seeks to engage with both the U.S. and China in order to enhance Brazil's technological and space capacity by consolidating its participation in several ongoing projects including CBERS-4, CBERS-04A, and the Scintillation Prediction Observation Research Task Mission (SPORT).¹²⁵ Moreover, while the recently enacted National Space Activities Act clarifies the rules and procedures for licensing space activities, it also echoes PNAE's commitment to flexibility and 'to stimulate strategic international cooperation'.¹²⁶

Conclusion

Brazil, as a regional power with global aspirations, has increasingly sought to navigate the challenges of the emerging Sino-American rivalry in space by employing a hedging strategy within its broader foreign policy framework of 'active non-alignment'. This approach reflects a deliberate effort to maintain strategic autonomy while advancing national interests through diversified partnerships and engagement with both the U.S. and China. Historically, Brazil's space program has shifted from initial alignment with

the U.S. to broader engagement following the country's shift to a civilian government. A landmark partnership with China in 1988 on the CBERS program underscored Brazil's commitment to increasing South-South cooperation and reducing dependency on the U.S. However, while joint space projects with China have grown over the years, Brazil has maintained active collaboration with the U.S. on several strategic projects including participation in the ISS program, the Technology Safeguards Agreement and participation in the Artemis Program, showcasing its pragmatic hedging strategy. Brasília has also maintained other options for space collaboration by participating in the BRICS Joint Committee on Space Cooperation.

Scholars have acknowledged that in periods of heightened great power rivalry, regional and middle powers have found hedging to be an attractive strategy.¹²⁷ In a unipolar international system, bandwagoning with the hegemon is a potentially rewarding strategy for many regional and middle powers, as it provides opportunities for gains¹²⁸ and can mitigate the dangers posed by the hegemon.¹²⁹ In other words, as Mowle and Sacko suggest, 'Bandwagoning is the most reasonable option when the alternative is to fall behind in both relative and absolute terms'.¹³⁰ However, the emerging multipolar configuration of the international system offers regional powers more maneuverability and opportunities to play great powers off one another.¹³¹

Brazil's policy of 'active non-alignment' provides lessons for other regional and middle powers on how to navigate the emerging Sino-American rivalry and global reconfiguration of power. More accurately, it offers an example of how a regional power can benefit from partnerships with multiple global actors while avoiding rigid alignments. Brazil's space policy demonstrates these principles in practice. Through its carefully calibrated hedging strategy, Brazil has successfully enhanced its technological capabilities, advanced its space program, and maintained strategic independence in key sectors. This approach aligns with its broader foreign policy objective of asserting itself as the main regional power in South America. As Sino-American rivalry intensifies, Brazil's hedging strategy in space is likely to remain a cornerstone of its geopolitical strategy, ensuring it continues to navigate global complexities while securing national interests.

However, Brazil still faces many challenges in becoming the regional leader in the space sector. Brazil's current state is analyzed in a study by Aliberti, Cappelli, and Praino on national space power.¹³² The authors measured and compared the data concerning 11 space actors and concluded that while Brazil has an above-average score for the political autonomy sub-dimension, it performs poorly regarding technical autonomy, and is the least capable in terms of the hard capacity sub-dimension. This means that, although Brazil may be considered a relatively autonomous spacefaring nation, it still has much work to do to develop its hard capacities. The challenge is to provide the resources necessary for the development of Brazil's hard capacities while enhancing its political and technical autonomy so that it is capable of independent action without being at the mercy of powerful external actors.

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ORCID iDs

Luis da Vinha  <https://orcid.org/0000-0002-7222-5095>

Vinicius Guedes Gonçalves de Oliveira  <https://orcid.org/0009-0004-9393-1425>

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Author biographies

Luis da Vinha is Senior Lecturer in Politics and International Relations at De Montfort University, Leicester, UK, and a researcher at the university's Institute of Humanities and Political Studies. He is also a UN SDG Fellow and an affiliate researcher with the Jeff Bleich Centre for Democracy and Disruptive Technologies, (Flinders University, Australia). His research focuses on international security, geopolitics, international order, and space policy.

Vinicius Guedes Gonçalves de Oliveira is a lawyer and PhD graduate from Flinders University, where he held a doctoral scholarship with SmartSat CRC, Australia's largest space Cooperative Research Centre. He is a Global Fellow at the European Space Policy Institute, analyzing space sector developments in Latin America and the Asia-Pacific, and lectures on space law for the Brazilian Space Agency. He is also a researcher at the Jeff Bleich Centre for Democracy and Disruptive Technologies, contributing to interdisciplinary projects on space, defence, cybersecurity, politics, and law. His research has been recognized with the 2024 Dr Michael Simpson Scholarship (Secure World Foundation) and a nomination as a Top five Early Career Researcher by Cooperative Research Australia.