

The ISMRM Brazilian Chapter: bridging the gap between international and local MRI communities

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Synopsis

Motivation: The Brazilian MRI community has made several contributions to the field. However, the advance of MRI in Brazil is hampered by many internal and external factors, including the language barrier, lack of internal communication and economical boundaries.

Goal(s): The ISMRM Brazilian Chapter aims to spread the ISMRM/SMRT to our local community, engage participants to join the ISMRM/SMRT membership and to push the development of MRI in Brazil in clinics, research and education.

Approach: To promote an annual chapter meeting, online educational content and to promote a multidisciplinary interaction.

Results: The Brazilian ISMRM membership has already increased in about 10% since the chapter's creation.

Impact: The ISMRM Brazilian Chapter has the potential to strengthen the MRI community in Brazil, reducing the gaps between the local and international MRI communities.

Introduction

The International Society of Magnetic Resonance in Medicine (ISMRM) was established to enhance communication, research, development, and education in MRI. It aims to provide resources for ongoing education, influence public policy, collaborate with governments and agencies, and promote equal opportunities for scientists and clinicians. The multidisciplinary collaboration among physicists, doctors, engineers, biomedical scientists, and MRI operators has led to countless contributions to the development of MRI in medicine.

The Brazilian MRI community has also provided significant contributions, including a locally constructed MRI scanner by the group of professor Horacio Panepucci at the Institute of Physics of Sao Carlos in the 1980s (Fig. 1) and the development of adiabatic pulses by professor Alberto Tannus¹. These accomplishments preceded the development of the field in Brazil, which resulted in the dissemination of Brazilian MRI researchers worldwide, including leading positions in important institutions. Another important milestone achieved by the Brazilian MRI was the installation of a 7T scanner (Fig. 2) in the facilities of the Medical School of the University of Sao Paulo, which is one of the only three 7T scanners installed in the South Hemisphere. Besides research, Brazil also has considerable importance in the number of available MRI scanners and its population working in the field.

However, the continental dimensions of Brazilian territory, the inequality of Brazilian economy among its states, the lack of communication among researchers, clinicians, operators as well as the geographical and economical boundaries to the Global North has slowed down the advancement of MRI in Brazil. Aiming to repeat the successful strategy of creating a multidisciplinary environment done by the ISMRM, the Brazilian community founded in August 2024 the ISMRM Brazilian Chapter.

Demographics

According to the statistics provided by the Brazilian Government, Brazil has a total of 3563 MRI scanners spread throughout its 26 states and the Federal District as shown in Fig.3a, while Fig. 3b shows the number of MRI scanners per 1 million inhabitants. The initial submission had 25 members (June-2024). In November -2024 we are 32 members and we expect an increment of 10% in memberships per year.

Chapter's missions

The Brazilian Chapter's mission is to build up a strong and engaged network of professionals and scientists working in the field of MRI in Brazil, in both clinical and research environments, with the aim to pursue following goals: (i) to foster the collaboration and exchange of experience between professionals of different backgrounds: physicists, physicians, engineers, MR technologists and operators, biomedical scientists, and other MR researchers; (ii) to advance the field of clinical and scientific MRI research in Brazil; (iii) to provide MRI educational and training opportunities; (iv) to provide mentorship opportunities for early career members.

Challenges and Opportunities

The establishment of the Brazilian Chapter was a mark but we have challenges to be sustainable. (i) To introduce the ISMRM/ISMRT in Brazil, the language is a first challenge: according to the British Council, in 2014 only 5% of the Brazilian population had some proficiency in English. While the website's translator tools are already working, more efforts are needed. The Chapter directory can make the curation of the translations and also bring general information translated to portuguese. (ii) Economics: Brazil is classified as a middle-income country considering the gross national income per capita. However, the conversion rate between 1,00 US dollar and Brazilian Real is around 5,79 (2024-11-05). The ISMRT membership can be already reduced to USD 20,00, which is affordable for MRI Operators, but for ISMRM membership, the trainee fee is still high for a master's student (USD 550,00 income/month). Clinicians/radiologists are required to pay local societies' fees, which may avoid the ISMRM full-membership payment. To increase the participation of physicians in ISMRM, we are bridging a collaboration with the Sao Paulo State Society of Radiology (SPR) and the Brazilian College of Radiology (CBR).

The plans for the inaugural Brazilian Chapter Annual Meeting

The Brazilian Chapter committee has already started planning the inaugural annual meeting, to be held in Sao Paulo in August-2025. The plans involve the offering of educational courses of basic MRI-physics, special sessions on quantitative MRI, thematic breakout rooms with MRI experts, a plenary session focused on the historical developments of MRI in Brazil, a plenary session with an international ISMRM speaker and will be encouraging the MRI research groups to submit their studies for scientific sessions. An initiative by our committee is to discuss with the ISMRM board the possibility of awarding the two best studies with an ISMRM membership plus waiver in the annual meeting fee as a way to attract more Brazilian members for the ISMRM.

Acknowledgements

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References

1. Tannús A, Garwood M. Adiabatic pulses. NMR Biomed. 1997;10(8):423-434. doi:10.1002/(SICI)1099-1492(199712)10:8<423::AID-NBM488>3.0.CO;2-X

Figures

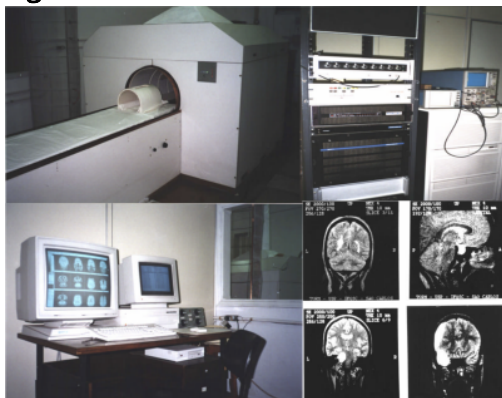
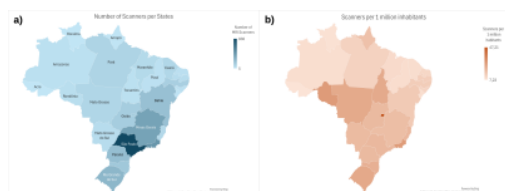


Illustration of the TORM MRI scanner developed in Sao Carlos, Brazil by the group of Prof. Horacio Panepucci.



The Siemens Magnetom 7T scanner installed in the facilities of the University of Sao Paulo, in Sao Paulo, Brazil.



a) Number of MRI scanners in the states of Brazil. b) Number of scanners per 1 million inhabitants in the states of Brazil.