

Frontiers in Quantum Mechanics and the 45 years of the Caldeira-Leggett Model

The importance of quantum mechanics for the scientific and technological development that we have experienced in the last 100 years was recently recognized by the United Nations, which proclaimed 2025 as [The International Year of Quantum Science and Technology \(IQ\)](#). The year of 2025 also celebrates the 45 anos years of the publication of the PhD thesis entitled **Macroscopic quantum tunnelling and related topics**, which was concluded in 1980 at the University of Sussex, Sussex, United Kingdom, by (at that time) PhD student Amir Caldeira, under the supervision of Prof. Anthony J. Leggett. Finally, in 2025, we also celebrate the 75th birthday of Prof. Amir Caldeira.

In order to celebrate the 45 years of the Caldeira-Leggett model and the long scientific carrier of Prof. Caldeira, we will organize a 3 day conference, **from October 13th to 15th, 2025**, in Campinas-SP, Brazil, which will gather together researchers from Brazil and abroad that work on several fields that were highly influenced by the Caldeira-Leggett model, such as foundations of quantum mechanics, open quantum systems, quantum information, quantum materials, quantum optics, and quantum biology.

Invited Speakers

- Anthony Leggett – University of Illinois Urbana-Champaign
- Antônio Castro Neto – National University of Singapore
- Carlos Balseiro – Centro Atômico Bariloche and Instituto Balseiro
- Cristiane de Morais Smith – Universiteit Utrecht
- José Nelson Onuchic – Rice University
- Pedro Lopes – QuEra Computing Inc.
- Rafael Fernandes – University of Illinois Urbana-Champaign
- Theo Nieuwenhuizen – Universiteit van Amsterdam
- Vaclav Spicka – Institute of Physics of the Czech Academy of Sciences
- Alfredo Ozório – Centro Brasileiro de Pesquisas Físicas
- Álvaro Ferraz Filho – Universidade Federal do Rio Grande do Norte
- Antônio Roque da Silva – Centro Nacional de Pesquisa em Energia e Materiais
- Carlos Henrique Monken – Universidade Federal de Minas Gerais
- Eduardo Marino – Universidade Federal do Rio de Janeiro
- George Matsas – Universidade Estadual Paulista
- Hilda Cerdeira – Universidade Estadual Paulista
- Luiz Davidovich – Universidade Federal do Rio de Janeiro
- Luiz Nunes de Oliveira – Universidade de São Paulo
- Olival Freire Junior – Universidade Federal da Bahia and CNPq
- Paulo Nussenzweig – Universidade de São Paulo
- Paulo Souto Ribeiro – Universidade Federal de Santa Catarina
- Raimundo Rocha dos Santos – Universidade Federal do Rio de Janeiro
- Thereza Paiva – Universidade Federal do Rio de Janeiro
- Thiago Oliveira – Universidade Federal Fluminense
- Vanderlei Bagnato – Universidade de São Paulo

Venue

The conference will take place at the [Casa do Professor Visitante \(CPV\)](#), an hotel in the University of Campinas, and at [The Brazilian Center for Research in Energy and Materials \(CNPEM\)](#), both at Campinas – SP, Brazil

- [Hotel reservation](#).
- [Directions to Campinas – Casa do Professor Visitante \(CPV\)](#).

Organizing Committee

- Eduardo Miranda
- Frederico Borges de Brito
- Harry Westfahl
- Ricardo Luis Doretto
- Thaís Victa Trevisan

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