



**ICTP** | International Centre for Theoretical Physics  
**SAIFR** | South American Institute for Fundamental Research

**Campus of IFT-UNESP - São Paulo, Brasil**

**June 14, 2 pm**

# THE ENTROPY OF HAWKING RADIATION



**JUAN MALDACENA**  
 Institute for Advanced Study, USA

Black holes are fascinating spacetime configurations predicted by general relativity. When quantum mechanics is taken into account, black holes are found to emit thermal radiation, called “Hawking radiation”. Recently an interesting area formula for the quantum entropy of black holes was derived. This also leads to a surprising new way to compute the entropy of Hawking radiation. This result indicates that the black hole formation and evaporation is consistent with standard quantum mechanical laws.

**This colloquium lecture will be transmitted live on the ICTP-SAIFR Youtube channel.**

**More information:**

**[ictp-saifr.org/maldacena2023](https://ictp-saifr.org/maldacena2023)**



ICTP-SAIFR STEERING COMMITTEE  
 Atish Dabholkar - ICTP director  
 Pasqual Barretti - UNESP rector  
 Luiz Eugênio Mello - FAPESP scientific director  
 Hugo Aguilaniu - President-Director of Serrapilheira I.  
 Luiz Davidovich (representing Acad. Brazilian of Science)  
 Juan Maldacena - Representing South America

ICTP-SAIFR SCIENTIFIC COUNCIL  
 Carlos Brito Cruz (chair) - Elsevier, UK  
 Rosario Fazio - ICTP representative  
 Alexandre Reily Rocha - IFT-UNESP director  
 William Bialek - Princeton U.  
 Eduardo Fradkin - U. Illinois  
 Gabriela Gonzalez - LIGO, Louisiana State U.  
 André de Gouvêa - Northwestern U.  
 Michael Green - Univ. of Cambridge, UK  
 Karen Hallberg - Balseiro Inst., Bariloche  
 Luis Lehner - Perimeter Inst., Waterloo

ICTP-SAIFR STAFF  
 Nathan Berkovits - Director  
 Rogerio Rosenfeld - Vice-Director  
 Pedro Vieira - Perimeter-SAIFR Coordinator  
 Jandira Oliveira - Executive Manager  
 Humberto Neto - Executive Secretary  
 Lilia Faria - Financial Manager  
 Marrey Peres, Jr. - Operations Manager  
 Malena Stariolo - Science Journalist  
 Tiago Codinhoto - Technical Assistant