**Public Lecture**

**Department of Physics**
**Jamia Millia Islamia**
New Delhi -110025

# XVIII Abdus Salam Memorial Lecture 2022-23

# Black Holes, Quantum Mechanics and Spacetime

*by*


## Prof. Spenta R. Wadia

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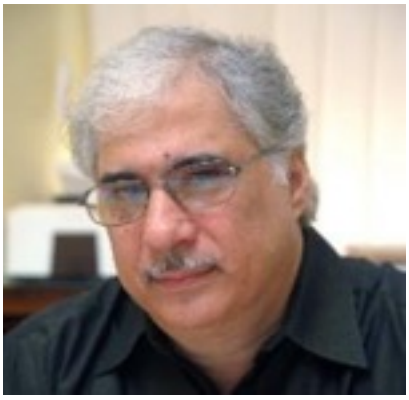
Spenta R. Wadia is the Infosys Homi Bhabha Chair Professor at the International Centre for Theoretical Sciences (ICTS-TIFR) and Distinguished Emeritus Professor of the Tata Institute of Fundamental Research. He is the Founding Director of ICTS-TIFR, a unique institution involved in furthering the boundaries of fundamental research and science education, emphasizing that science is one story. He has made basic contributions to Quantum Field Theory, Statistical Mechanics, String Theory and Black Hole physics. His other interests are in complex systems and cross-disciplinary biology.



He is an alumnus of St Xavier's College Mumbai, Indian Institute of Technology Kanpur, City University of New York and the University of Chicago. He has held long term visiting positions at the Institute for Advanced Study at Princeton and CERN Geneva. His recognitions include the TIFR Alumni Association Excellence Award in 2016, The World Academy of Science (TWAS) Physics Prize in 2004, the Physics Prize of the Abdus Salam International Centre for Theoretical Physics in 1995. He is a Distinguished Alumnus of St Xavier's College, Mumbai, and a member of the Indian National Science Academy, The Indian Academy of Sciences and of TWAS.


**Abstract of the talk :** We will discuss in a historical manner the tension between Newton's theory of gravitation and the Special Theory of Relativity that led to the general relativistic theory of gravitation in 1915. Einstein's General Relativity and Quantum Mechanics (which is almost a hundred years old) are the two theories of physics which work extremely well in their domain of applications. However, there is again a tension between them, which was brought out by Hawking in trying to understand the quantum nature of black holes. We will discuss approaches to resolving this tension in the context of String Theory, which is a stepping stone towards a theory of quantum gravity and elementary particles.


**Friday, 10th March, 2023 at 10 AM**
**Auditorium, Faculty of Engineering and Technology,**
**Jamia Millia Islamia**

**All are welcome**