

Piazza della Scienza, n. 3 20126 Milano - Italia

In the absence of documented basic knowledge of Quantum Mechanics and Atomic Physics in the candidate's curriculum, the Admission Committee will conduct an oral assessment to evaluate the candidate's understanding of the topics outlined below, either at the time of admission or at a time agreed upon by the Admission Committee.

Suggested books:

BICOCCA

Introduction to quantum mechanics, David J. Griffiths, Chapters 1, 2, and 4.

Physics of the Interstellar and Intergalactic Medium, Bruce T. Draine, Chapters 1, 2 (2.1,2.2, 2.3), and 4.

You can view the content here of relevance for the colloquium:

Griffiths's book

CHAPTER 1

THE WAVE FUNCTION 1 1.1 The Schrodinger Equation 2 1.2 The Statistical interpretation 1.3 Probability 5 1.4 Normalization 11 14 1.5 Momentum, 1.6 The Uncertainty Principle 17 **CHAPTER2** THE TIME-INDEPENDENT SCHRODINGER EQUATION 2.1 Stationary States 20 2.2 The Infinite Square Well 24 2.3 The Harmonic Oscillator 31 2.4 The Free Particle 44 2.5 The Delta-Function Potential 50 2.6 The Finite Square Well 60 2.7 The Scattering Matrix 66 **CHAPTER4**

QUANTUM MECHANICS IN THREE DIMENSIONS

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Content of Draine's book

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