Struttura della Materia II
Syllabus

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1. **Missing information**
   1.1 Missing information for a discrete number of equally probable choices
   1.2 Choices with known probabilities
   1.3 Missing information for a choice in the continuum
2. **Statistical mechanics**
   2.1 Classical statistics
      2.1.1. State of a classical system and physical quantities
      2.1.2. Active and passive transformations
      2.1.3. Time evolution
      2.1.4. Statistical treatment
      2.1.5. Schrödinger representation
      2.1.6. Heisenberg representation
   2.2 Quantum statistics
      2.2.1. Sate of a quantum system and physical quantities
      2.2.2. Time evolution
      2.2.3. Statistical treatment and density matrix
3. **Choice of probability**
   3.1 First postulate: a priori probability
   3.2 Available information
   3.3 Second postulate: constrained maximum of missing information
   3.4 Maxima subject to constraints: Lagrange multipliers
   3.5 Available information in classical statistics
   3.6 Identical particles in classical statistics
   3.7 Available information in quantum mechanics

References

1 Amnon Katz, *Principles of Statistical Mechanics*, W.H. Freeman and Co., San Francisco and London, 1967, Chapters 1,2

2 Amnon Katz, *Principles of Statistical Mechanics*, W.H. Freeman and Co., San Francisco and London, 1967, Chapter 3

3 Amnon Katz, *Principles of Statistical Mechanics*, W.H. Freeman and Co., San Francisco and London, 1967, Chapter 4

4 Amnon Katz, *Principles of Statistical Mechanics*, W.H. Freeman and Co., San Francisco and London, 1967, Chapters 5,6

5 Amnon Katz, *Principles of Statistical Mechanics*, W.H. Freeman and Co., San Francisco and London, 1967, Chapter 7

9 Rodney Loudon, *The Quantum Theory of Light*, Oxford University Press, Oxford and New York, 2008, Chapter 1

10 Rodney Loudon, *The Quantum Theory of Light*, Oxford University Press, Oxford and New York, 2008, Chapter 3

17 Charles P. Slichter, *Principles of magnetic resonance*, Harper & Row, New York, Evanston and London, 1964, Chapters 1,2