Simmetria e Chimica

Introduction

Emanuele Coccia

UNIVERSITÀ DEGLI STUDI DI TRIESTE

DSCF Dipartimento di Scienze Chimiche e Farmaceutiche

PhotoInduced Quantum Dynamics (PIQD) Unit

PIQD

Practical info

- ecoccia@units.it
- C11 building, fourth floor, room 453
- Just send an email to get an appointment
- Register on Moodle

Programme

- Symmetry

Programme

- Symmetry
- Group theory

Programme

- Symmetry
- Group theory
- Point groups and molecules

Programme

- Symmetry
- Group theory
- Point groups and molecules
- Vector spaces and linear transformations

Programme

- Symmetry
- Group theory
- Point groups and molecules
- Vector spaces and linear transformations
- Matrix representations of point groups

Programme

- Symmetry
- Group theory
- Point groups and molecules
- Vector spaces and linear transformations
- Matrix representations of point groups
- Symmetry and quantum mechanics

Programme

- Symmetry
- Group theory
- Point groups and molecules
- Vector spaces and linear transformations
- Matrix representations of point groups
- Symmetry and quantum mechanics
- Applications:
  - Molecular vibrations and selection rules
  - Orbital hydrization
  - Hückel method and molecular orbitals
  - Crystal-field theory

Books

- L. Dore, *Simmetria e Chimica*, EDITOGRAFICA learning
- F. A. Cotton, *Chemical Applications of Group Theory*, 3rd Ed. Wiley
- Further reading:
  - D. C. Harris and M. D. Bertolucci, *Symmetry and spectroscopy*, Dover Publications
  - D. M. Bishop, *Group Theory and Chemistry*, Dover Publications

Exam

- Oral exam: (at least) three questions
- Exam done in a lecture room:
  - Two rounds in winter session
  - Two rounds in summer session
  - Two rounds in September