**15C730  CURRENT PHYSICAL CHEMISTRY**
Thomas BUERGI
PhD-chemistry
Annual total 48h over the year 5 ECTS
Please consult display panels and website of the School

**Contents:**
- Conferences of the Department of physical chemistry, according to display panels and website of the School
- 3rd Cycle conferences, according to display panels and website of the School

**Documentation and bibliography:**
List of conferences available on the website of the School:

Preparation for PhD in chemistry
Evaluation: Active participation

**15C731  DENSITY MATRIX METHODS IN OPTICAL SPECTROSCOPY**
Eric VAUTHEY
PhD-chemistry
Spring 2h/sem, total 28h 3 ECTS
Monday, 10:15-12:00 Sciences II, A50A

**Objectives:**
Presentation of the theoretical concepts required for a deep understanding of molecular spectroscopy (laser spectroscopy, NMR, etc.).

**Contents:**
- The time dependent Schrödinger equation
- The density operator and the Liouville equation
- The time dependent perturbation theory (the Pauli master equation)
- Description of light matter interaction using Green's functions and Feynman's diagrams
- Coherent optical spectroscopic techniques

**Documentation and bibliography:**
Handout of the course.

Requirements: Chimie physique I: thermodynamique et cinétique (12C004), Chimie physique II: chimie quantique (12C005), Chimie physique III (13C001)
Preparation for PhD in chemistry
Interactive discussions
Teaching will be given in English or in French, in agreement with students
Exam sessions: January-February + June + August-September
Evaluation: Written or oral exam on a subject selected with the candidate