

**【Title】**

Quantum Mechanics  
(Review of Elementary QM from an operator point of view)

**【Credit】**

**【Name of Prof. (Contact)】** Email address

Etienne Forest ✖ [forest@post.kek.jp](mailto:forest@post.kek.jp), [eforest.4816968@gmail.com](mailto:eforest.4816968@gmail.com)

**【Goals of the lecture】**

In this class I will review first Classical mechanics from an operator point of view. I will then make the jump to ordinary QM and also emphasize operator methods.

**【Method of Evaluation】**

Periodic assignments

**【Required Textbook】**

None: I will provide various PDFs or books

**Content:**

Hamilton's equation and the Poisson bracket.

The classical equation for a distribution (Liouville's operator)

Operator solution of the harmonic oscillator and perturbation theory

The Heisenberg representation

QM oscillator with operators

Perturbation of the harmonic oscillator with operators

Semi-Classical results of Bohr-Sommerfeld

Quantum and Classical Chaos : why Bohr-Sommerfeld fails in general

And more...