

Instructions to apply for CEMRACS 2025 on Quantum Computing

All candidates have to provide a **motivation letter** and a **CV** containing the following information. Attention, if you have already a CV in the CIMPA database from previous application, you must update it for this specific program

Applications also include two recommendation letters that will be sent electronically by the referees

Some instructions are given below depending on your situation

1) **Post-doc / young PhD**

A (very) small summary of your PhD and current work

Names and contact information (email address) of your PhD supervisor(s), post-doc collaborator(s).

2) **PhD student**

A (very) small summary of your PhD subject

Names and contact information (email address) of your PhD supervisor(s)

3) **Master student (finishing)**

Transcript of marks of the last two years and list of courses taken in Master

Names and contact information (email address) of reference teachers

If applicable, a (very) small summary of your internship subject

Whatever your situation, please provide your level X from 0 to 3 for the skills below.

To help, here is a brief evaluation guide: [0] *none* ; [1] *introductory course, small practical experience (one academic project)* ; [2] *full course, practical experience (several academic projects or internship)* ; [3] *expertise, part of your main research field*.

[X] - Linear and multilinear algebra (tensor, unitary and hermitian matrices, ...)

[X] - Python programming

[X] - Quantum mechanics and applications (such as quantum chemistry or quantum field theory, ...)

[X] - Theoretical computer science / algorithmic

[X] - Cryptography

[X] - Quantum algorithmic (Quantum circuit, Shor's and Grover's algorithms, Quantum Phase Estimation, ...)

[X] - Quantum programming (myQLM, Qiskit, Qaptiva, Cirq, Q Sharp, ...)

When a grade is strictly positive, please give details about the concerned skill(s) in your application