

Swiss organizations interested to receive Korean students/researchers supported by Korean ministry can submit the following form to: seoul.science@eda.admin.ch

General Information and host organization key contact

Organization Name	IBM Reasearch Europe - Zurich
Organization address	Säumerstrasse 4, 8803 Rüschlikon, Switzerland
Type of Research (Keywords)	Quantum Computing
Contact person (name, first name)	Wörner, Stefan
Contact person email (internal use only)	wor@zurich.ibm.com
Contact person phone number (internal use only)	+41447248111
Organization website (link)	https://www.zurich.ibm.com/
Max number of students/researchers to host in the Swiss organization	Graduate students (Master/PhD) : 2 Post-doctoral researchers: 0

Organization / Research description

As the European branch of IBM Research, the mission of the IBM Research Europe – Zurich Lab — in addition to pursuing cutting-edge research for tomorrow's information technology — is to cultivate close relationships with academic and industrial partners, be one of the premier places to work for world-class researchers, to promote women in IT and science, and to help drive Europe's innovation agenda.

Worldwide interaction and collaboration with internal partners in research, development, industry sectors, and with IBM customers play a vital role in the Zurich Laboratory's activities. At the same time, IBM researchers are active members of the international scientific community by participating in conferences, and professional associations in a variety of functions. IBM Research Europe – Zurich is also involved in many joint projects with universities throughout Europe, in research programs established by the European Union and the Swiss government, and in cooperation agreements with research institutes of industrial partners.

Task description (If you have, max 1000 characters)

Project in Quantum Optimization

Optimization is a promising application domain for achieving a quantum advantage with near-term noisy quantum devices. Possible applications could range from finance, to logistics, to biology. However, there are still many open questions to be answered. One key challenge is how to mitigate the noise present in near-term devices. While there is a lot of research on error mitigation for expectation values, which are crucial, e.g., in quantum chemistry, almost no research has been conducted with a focus on optimization. The goal of this project is to develop, analyze, and demonstrate optimization-specific error mitigation schemes. This may allow to relax requirements introduced by other application domains that are less relevant in optimization, and thus, scale to larger demonstrations of applying quantum computers to relevant optimization problems.