

## Jury Member Report – Doctor of Philosophy thesis.

**Name of Candidate:** Luis Ernesto Campos Espinoza

**PhD Program:** Computational and Data Science and Engineering

**Title of Thesis:** On the trainability of variational quantum circuits as algorithmic models

**Supervisor:** Professor Jacob Daniel Biamonte

### Name of the Reviewer:

I confirm the absence of any conflict of interest  (Alternatively, Reviewer can formulate a possible conflict)	<b>Date: 16.10.2024</b>
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*The purpose of this report is to obtain an independent review from the members of PhD defense Jury before the thesis defense. The members of PhD defense Jury are asked to submit signed copy of the report at least 30 days prior the thesis defense. The Reviewers are asked to bring a copy of the completed report to the thesis defense and to discuss the contents of each report with each other before the thesis defense.*

*If the reviewers have any queries about the thesis which they wish to raise in advance, please contact the Chair of the Jury.*

### Reviewer's Report

Reviewers report should contain the following items:

- Brief evaluation of the thesis quality and overall structure of the dissertation.
- The relevance of the topic of dissertation work to its actual content
- The relevance of the methods used in the dissertation
- The scientific significance of the results obtained and their compliance with the international level and current state of the art
- The relevance of the obtained results to applications (if applicable)
- The quality of publications

The summary of issues to be addressed before/during the thesis defense

- Brief evaluation of the thesis quality and overall structure of the dissertation.

The quality of the thesis is satisfactory and the structure does not present any problems.

- The relevance of the topic of dissertation work to its actual content

The topic is of current interest to the quantum information science community, relating to trainability of variational quantum circuits.

- The relevance of the methods used in the dissertation

The methods that are used are analytical and numerical, which is standard for this type of work.

- The scientific significance of the results obtained and their compliance with the international level and current state of the art

The results are highly significant to those researchers working on variational quantum algorithms. I believe some of the results are already well accepted.

- The relevance of the obtained results to applications (if applicable)

The results are relevant to NISQ quantum computing.

- The quality of publications

The quality of the publications is satisfactory.

#### Provisional Recommendation

*X I recommend that the candidate should defend the thesis by means of a formal thesis defense*

*I recommend that the candidate should defend the thesis by means of a formal thesis defense only after appropriate changes would be introduced in candidate's thesis according to the recommendations of the present report*

*The thesis is not acceptable and I recommend that the candidate be exempt from the formal thesis defense*

