

Título: 21STIC10 Qapla' - Quantum Aspects of Programming Languages

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Coordinador internacional: Alejandro Díaz-Caro (Universidad Nacional de Quilmes)

Coordinador chileno: Federico Olmedo (Universidad de Chile)

Coordinador uruguayo: Octavio Malherbe (Universidad de la República)

Coordinadores franceses: Gilles Dowek (Inria, LSV, ENS Paris-Saclay) - Simon Perdrix (CNRS/LORIA) - Pablo Arrighi (Aix-Marseille) - Benoît Valiron (CentraleSupélec)

Otros participantes: Mauricio Guillermo - Pablo E. Martínez López - Hernán Melgratti - Alexandre Miquel - Juliana Kaizer Vizzotto.

Estudiantes de doctorado y postdocs: A. Borgna - T. Carette - F. Castro - K Chardonnet - A. Clément - N. Durbec - N. Eon - D-H. Lee - M. Ivniisky - R. Romero - C. Sottile - M. Veshchezerova - V. Zamdzhiev

Resumen: The design of quantum programming languages is a rich framework that allows studying intrinsic properties of the computation we are modelling, such as parallelism, entanglement, superposition, etc; also, it is a way to study new logics (quantum logics with a computational ground), as well as to study classical logics from a new perspective. Finally, studying the foundational bases of programming languages gives a path to develop proper implementations. This project proposes to study several aspects of quantum programming languages, with different approaches (quantum control/classical data, quantum control and data, categorical techniques, semantical techniques, realizability). The final aim is to merge different approaches in order to study from logics to implementations.