

## Research Group on Quantum Computation and Quantum Information

Tecnológico de Monterrey Campus  
Estado de México



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## Members

Our research group is very young and enthusiastic, and its members are:

Dr Francisco J. Delgado Cepeda  
Mr. José Luis Gómez Muñoz, MSc  
Dr Sergio E. Martínez Casas  
Dr Salvador E. Venegas Andraca



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## Research Interests (1/2)

Our research interests are:

1. Discrete and continuous quantum walks, and their algorithmic applications.
2. Development of quantum algorithms and their application in two scientific fields: NP-complete problems and Bioinformatics.
3. Quantum Cellular Automata and their links with quantum walks.



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## Research Interests (2/2)

4. Development of communication protocols in quantum networks
5. Measures for quantum entanglement
6. Software development for simulating quantum algorithms and quantum cryptography protocols.



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## Teaching and courses

In the past...

- First Mexican Summer School on Quantum Computation and Quantum Information. Merida, Yucatan, Mexico. June 2004.  
Attendants: undergraduate and graduate students.
- Introductory course to quantum computation. Tecnológico de Monterrey, June 2006.  
Attendants: Professors from Tecnológico de Monterrey.
- Second Mexican Summer School on Quantum Computation and Quantum Information. Tecnológico de Monterrey Campus Estado de Mexico. July 2007.  
Attendants: researchers, undergraduate and graduate students.



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## First Summer School on Quantum Computation and Quantum Information



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## Second Summer School on Quantum Computation and Quantum Information



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## Teaching and courses

### Currently...

Introductory course (undergraduate level) to Quantum Computation and Quantum Cryptography. Tecnológico de Monterrey Campus Estado de Mexico. January-December 2007.



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## Teaching and courses

### In the future...

MSc and PhD programs on Quantum Computation



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## Links with other research groups (1/2)

### México

Bioinformatics Research Group. Tecnológico de Monterrey Campus Estado de México

Laboratory for Scientific Computing and Bioinformatics. Faculty of Sciences, UNAM-UMDI Sisal (Yucatan).

Quantum Mechanics Research Group at CINVESTAV



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## Links with other research groups (2/2)

### United Kingdom

Centre for Quantum Computation at the University of Oxford.  
Quantum Information Science Group at the University of Leeds.  
Quantum Information Group at University College London.  
Centre for photonic systems at the University of Cambridge.

### United States of America

Aspuru-Guzik Research Group at Harvard University.  
Professor Marco Lanzagorta, ITT Co. and George Mason University.

### Spain

University of the Basque Country.



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