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## One-way Quantum Computing with Photonic Orbital Angular Momentum

*Wednesday, 13 July 2011 14:45 (15 minutes)*

One-Way Quantum computing is based on the preparation of certain entangled states of several particles, which are subsequently individually measured. The measurements serve to process information as well as to read out the final result of the computation. The implementation with OAM carrying photons is based on the usage of qubits (only two OAM values are relevant) but is a first step towards the implementation of a generalized form of One-Way Quantum computing by means of qudits (involving more than two OAM values).

**Level (Hons, MSc, PhD, other)?**

MSc

**Consider for a student award (Yes / No)?**

Yes

**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

Yes

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**Session Classification:** Theoretical

**Track Classification:** Track G - Theoretical and Computational Physics