KENNETH DAVIDSON, U. Waterloo & U. Ottawa
Positive Maps and Entanglement in Real Hilbert Spaces

Quantum mechanics is formulated as a complex theory, but our perception of the world is real. This was part of our motivation for studying positive maps on real Hilbert spaces. There are positive, hermitian maps on real spaces whose complexification is not positive. The notion of a separable map has a real version and a complex version, and there are real maps which are complex separable but not real separable. Finally we look at entanglement breaking maps and a real version of the PPT^2 conjecture.