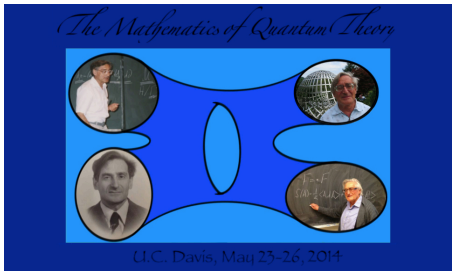

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A mathematical approach to quantum curves

Saturday, May 24, 2014 9:15 AM (45 minutes)

A quantum curve is an h-bar deformation family of D-modules on a complex analytic curve. It takes the form of a stationary Schroedinger equation in one dimension, quantizing the spectral curve, which is a ramified covering of the starting curve. The coordinate of the starting curve is a parameter of a generating function, and the spectral curve is the Riemann surface of holomorphy of this function. The quantum curve, as a differential equation, then characterizes this function, which is a generating function of quantum topological invariants. In this talk, I will present recent mathematical developments on this subject, obtained jointly with Dumitrescu, Dunin-Barkowski, Norbury, Popolitov, Shadrin, and Sulkowski.

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