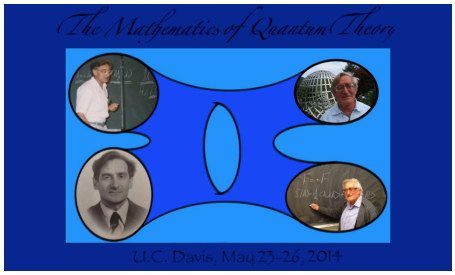

Contribution ID: **15** Type: **not specified**

Quantum curves and the infinite-dimensional Grassmannian

Saturday, 24 May 2014 11:15 (45 minutes)

One says that a pair (P, Q) of ordinary differential operators specify a quantum curve if $[P, Q] = \hbar$. If a pair of difference operators (K, L) obey the relation $KL = \lambda LK$ where $\lambda = e^{\hbar}$ we say that they specify a discrete quantum curve.

This terminology is prompted by well known results about commuting differential and difference operators , relating pairs of such operators with pairs of meromorphic functions on algebraic curves obeying some conditions.

Our methods are based on the interpretation of quantum curves in terms of infinite-dimensional Grassmannian; in particular, it follows from this interpretation that (discrete) KP-hierarchy can be used to deform a (discrete) quantum curve.
The main goal is to study the moduli spaces of quantum curves. We will relate the moduli spaces for different $\hbar$. We will show how to quantize a pair of commuting differential or difference operators (i.e. to construct the corresponding quantum curve or discrete quantum curve)

Primary author: Prof. SCHWARZ, Albert (UC Davis)

Presenter: Prof. SCHWARZ, Albert (UC Davis)