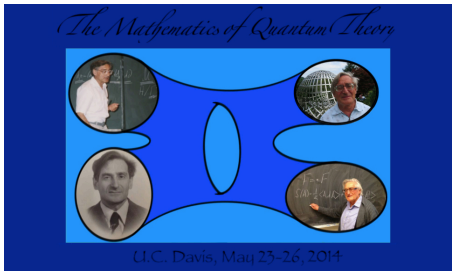

Contribution ID: **22** Type: **not specified**

On regularized geometry of loop spaces.

Monday 26 May 2014 14:00 (45 minutes)

The $O(N+1)$-model or a sigma model whose target is a round N-dimensional sphere is a well established (by physical standards) subject. It attracts attention because the theory exhibit spontaneous mass generation-a feature that is also expected in a more realistic but also more complicated four-dimensional gauge theories. In addition, the $O(N+1)$-model is believed to be completely integrable. In particular, an explicit formula for the mass gap is know.

I will discuss mathematical aspects of quantum Hamiltonian formalism for the $O(N+1)$-model such as a precise statement of the mass gap conjecture and a possible definition of the renormalization group that goes beyond perturbation theory.

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