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Diamonds of integrable deformations

Wednesday 27 September 2023 12:00 (40 minutes)

There are two well-known origins of 2-dimensional integrable QFTs from 4 dimensions – localisation of 4d Chern-Simons and symmetry reduction of 4d anti self-dual Yang-Mills. It is a conjecture of Costello that these can be unified in a diamond of theories, starting from holomorphic Chern-Simons theory in 6 dimensions.

It has been shown how this works for the simplest class of theories, including the principal chiral model with a Wess-Zumino term, by Bittleston and Skinner. In this talk I will discuss what happens if we try to deform and explore the new features that appear, including the role of novel boundary conditions in 4d Chern-Simons.

This talk is based on work with Lewis Cole, Ryan Cullinan, Joaquin Liniado and Dan Thompson.

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