Mathematics, Statistics, and Computer Science   **@ UIC**

Conference talk.

Interplay between Higgs bundles and opers.

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Abstract: We construct filtered extensions to explain the quantum deformation parameter, originated in physics as the Planck constant, as a deformation parameter of vector bundles and connections. The key concept is $SL(r, \mathbb{C})$- opers of Beilinson-Drinfeld (arbitrary r). We construct $SL(r, \mathbb{C})$-opers geometrically to prove that the quantization process is a biholomorphic map from the moduli space of Hitchin spectral curves to the moduli space of opers. We prove that the semiclasical limit of the family of opers is the spectral curve associated to the Higgs bundle. This talk is based on joint work with Motohico Mulase contained in arXiv:1702.00511, arXiv:1705.05969, and arXiv:1701.00155v2

The talk is part of the 2-day meeting "Current trends on spectral data for Higgs bundles III"

Monday, November 13 at 9:30 AM in SEO 636