

Institut Henri Poincaré
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String Theory in Greater Paris

Rencontres Théoriciennes
“Supergravité, théorie des cordes et théorie M”

Jeudi 14 Mars 2024, 11:45

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Grothendieck lines in 3d SQCD and the quantum K-theory of the Grassmannian

In this talk I will revisit the correspondence between 3d $\mathcal{N} = 2$ SQCD and the quantum K-theory of the Grassmannian variety $Gr(N_c, n_f)$. 3d $N = 2$ SQCD has gauge group $U(N_c)_{k, k+\ell N_c}$ and n_f chiral matter multiplets in the fundamental representation of $U(N_c)$. By analysing the moduli space of 3d vacua, we will fix the values of the Chern-Simons (CS) levels (k, ℓ) that give us 3d GLSMs that flow to 3d NLSMs with target $Gr(N_c, n_f)$. Then, I will review the 3d A-model of these GLSMs and the relation between the correlation functions in this model and quantum K-theory ring of the Grassmannian. A standard basis of this ring is given by the Schubert classes. These are the classes of the structure sheaves of the Schubert subvarieties. I will show how one can construct half-BPS line operators in the 3d GLSM that flow to these classes in the IR. This talk is based on [arXiv : 2301.10753, 2305.00534, 2309.06980] with C. Closset.

Institut Henri Poincaré, salle 314, 3^{ème} étage

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