Contribution ID: **36** Type: **not specified**

A pair of Calabi-Yau threefolds from a pair of dual non-abelian gauged linear sigma models

Thursday 19 March 2015 11:20 (20 minutes)

Two-dimensional gauge field theories with N=(2,2) supersymmetry, known as gauged linear sigma models (GLSM), may be the ultraviolet completion for a nonlinear sigma model with Calabi-Yau threefold target space. In this case, it is possible to calculate certain topological properties of the Calabi-Yau target space within the GLSM. Recently, a relation between the partition function of the GLSM on the two-sphere and the Kaehler potential on the quantum exact Kaehler moduli space of the Calabi-Yau has been conjectured. We exploit this relation for a pair of non-abelian GLSMs which display both weakly and strongly coupled phases. The fact that their two-sphere partition functions agree provides evidence for a duality between the two models.
From a technical point of view the evaluation of the above mentioned partition function involves the calculation of multidimensional Mellin-Barnes integrals. We demonstrate in arbitrary dimension how these integrals are given as sums of Grothendieck residues.

Presenter: GERHARDUS, Andreas (Bonn)