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Representation and Number Theory Seminar

Nested Hilbert schemes and instanton moduli spaces
by

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Abstract

I'll present a computation in Tanaka-Thomas's algebro-geometric approach to Vafa-Witten invariants of projective surfaces. The invariants are defined by integration over moduli spaces of stable Higgs pairs on surfaces and are formed from contributions of components; the physical notion of *S*-duality implies conjectural symmetries between these contributions.

One component, the "vertical" component, is a nested Hilbert scheme on a surface. I will explain work in progress with M. Kool and T. Laarakker, in which we express invariants of this component in terms of instanton moduli space of torsion-free framed sheaves on P^2. Applying a recent blow-up identity of Kuhn-Leigh-Tanaka, we obtain formulas conjectured by Göttsche-Kool-Laarakker. One consequence is a formula for refined invariants of vertical component in rank *2*.

Date	:	**31 January 2023 (Tuesday)**
Time	:	**4:00pm – 5:00pm (Hong Kong Time)**
ZOOM Link	:	

https://cuhk.zoom.us/j/97838822137?pwd=ZTVvSC9abmNjR3RCcS9FTzJNTVhXdz09

Meeting ID: 978 3882 2137
Passcode : sesame

All are Welcome