

## *Quantization of moduli spaces of sheaves*

This talk is a report on a joint work (in progress) with Pantev, Vaquié and Vezzosi. I will explain how ideas and techniques from derived algebraic geometry can be used in order to construct (generalized) symplectic forms on various moduli spaces of sheaves. This includes the well known examples of symplectic structures on certain moduli spaces (such as the moduli of linear representations of the fundamental group of a Riemann surface, or the moduli space of vector bundles on a K3 surface), but also many new examples (e.g. vector bundles on CY varieties of any dimension). The construction of these (generalized) symplectic structures is based on a theorem insuring the existence of a natural (generalized) symplectic form on the moduli space of maps towards a symplectic target.

In a second part, I will briefly explain how these symplectic forms can be "quantized", giving rise to various quantum versions of classical moduli spaces.