



## SFB-Seminar

### ZEIT:

30.11.2010, 16:00 Uhr - 19:00 Uhr

### ORT:

HU  
Institut für Sportwissenschaft  
Philippstr. 13, 10115 Berlin (Mitte)  
Haus 11, Hörsaal 5

### PROGRAMM:

16:00 - 17:00 **Marcos Jardim (IMECC-UNICAMP Brazil)**

#### **Moduli spaces of framed instantons sheaves on $IP^n$**

We generalize the ADHM construction of instantons to describe the moduli space of framed torsion-free instanton sheaves on  $IP^n$ ,  $n \geq 2$ . We then discuss instanton bundles on  $IP^3$  and describe the geometric structure of their moduli space. If time allows, we shall also discuss perverse instanton sheaves.

This is joint work with Amar Henni and Renato Martins.

17:00 - 17:30 Kaffeepause/ Coffee Break

17:30 - 18:30 **Giovanni Landi (Universita di Trieste)**

#### **Dimensional Reduction over the quantum projective line and non-abelian q-vortices**

We extend equivariant dimensional reduction techniques to the case of quantum spaces which are the product of a Kähler manifold  $M$  with a quantum Riemann sphere. We work out the reduction of bundles which are equivariant under the natural action of the quantum  $SU(2)$  group, and also of invariant gauge connections on these bundles. The reduction of Yang-Mills gauge

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theory on the product space leads to  $q$ -deformations of the usual quiver gauge theories on  $M$ . In particular, we formulate generalized instanton equations on the quantum space and show that they correspond to  $q$ -deformations of the usual holomorphic chain vortex equations on  $M$ . We study some topological stability conditions for the existence of solutions to these equations, and prove that the corresponding vacuum moduli spaces are generally better behaved than their undeformed counterparts, but much more constrained by the  $q$ -deformation. We work out explicit examples, including new examples of non-abelian vortices on Riemann surfaces, and  $q$ -deformations of instantons whose moduli spaces admit the standard hyper-Kähler quotient construction.

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