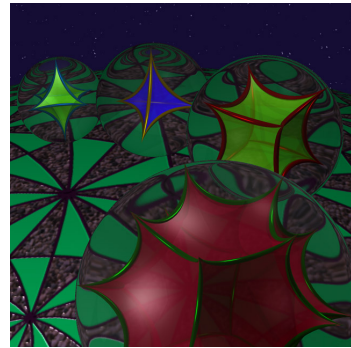


**Oberseminar Geometrie**  
Department of Mathematics  
University of Fribourg  
Seminar room, Math II (Lonza)  
**Wednesday December 12, 2018, 10:20-12:00**



ANA PEÓN-NIETO (Genève)

## **A characterisation of very stability of bundles via the Hitchin map**

The aim of this talk is to explain the equivalence between very stability of a vector bundle  $E$  on a Riemann surface and properness of the restriction of the Hitchin map to the space of Higgs fields on  $E$ .

I will start by explaining the basic features of the moduli space of Higgs bundles, including the existence of a diffeomorphism with the character variety, the Hitchin map, and the  $C^*$  action. I will then move on to characterise very stable bundles (namely, those admitting only the zero nilpotent Higgs field) in terms of the Hitchin map, and give the main ideas of the very geometric proof (joint work with C. Pauly).

Time permitting, I will finish by explaining an application to the geometric Langlands programme, more precisely, the Donagi–Pantev programme to prove the full correspondence via its abelianised version (mirror symmetry of Hitchin systems for Langlands dual groups).