



# SEMINÁRIO DE GEOMETRIA ALGÉBRICA

## Hyperholomorphic sheaves

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**Resumo:** A hyperkahler manifold is a Riemannian manifold equipped with an action of quaternion algebra in its tangent bundle which is parallel with respect to the Levi-Civita connection. A vector bundle with connection on a hyperkahler manifold is called hypercolomorphic if its curvature is invariant under the quaternion action. Such connections can be obtained by applying the Kobayashi-Hitchin correspondence (the correspondence between the stable bundles and the instantons) to stable bundles with quaternionic invariant Chern classes  $c_1$  and  $c_2$ . I will give an overview of this construction and explain how to extend this correspondence to coherent sheaves by considering the singular solutions of the instanton equation.