



# Symmetric tensors on the intersection of two quadrics and Lagrangian fibration

A. Beauville, A. Etesse, A. Höring, J. Liu and C. Voisin

## ABSTRACT

Let  $X$  be an  $n$ -dimensional (smooth) intersection of two quadrics, and let  $T^*X$  be its cotangent bundle. We show that the algebra of symmetric tensors on  $X$  is a polynomial algebra in  $n$  variables. The corresponding map  $\Phi : T^*X \rightarrow \mathbb{C}^n$  is a Lagrangian fibration, which admits an explicit geometric description: its general fiber is a Zariski open subset of an abelian variety, the quotient of a hyperelliptic Jacobian by a 2-torsion subgroup. In dimension 3,  $\Phi$  is the Hitchin fibration of the moduli space of rank 2 bundles with fixed determinant on a curve of genus 2.