Construction of a surface of general type with $p_g = q = 1$ and $K^2 = 6$

Abstract

Complex algebraic surfaces of general type with $p_g = q = 1$ are not yet completely understood. Until recently only a few examples were known. In this talk I will use the Computational Algebra System Magma to construct such a surface with $K^2 = 6$, as a double cover of a Kummer surface (quartic surface in $\mathbb{P}^3$ with 16 ordinary double points). This seminar will be accessible to non-specialists on Algebraic Geometry.