

# **Hilbert functions of Veronesean subvarieties and Complete Intersections**

STEFANO CANINO, Uniwersytet Warszawski

If  $X$  is a set of reduced points lying on a rational normal curve, the Hilbert function of  $X$  is classically known. Starting from this result, we address the following problem: what are the possible Hilbert functions of a reduced subvariety of a Veronese variety? We provide a general result for any Veronese variety and then derive an effective characterisation of the Hilbert function of points lying on a Veronese surface. As an application, we completely classify the complete intersections of the ambient space that lie on a Veronese surface, and we formulate a conjecture for Veronese varieties in higher dimensions. This is joint work with Prof. Enrico Carlini.