



CENTRO DE
MATEMÁTICA
UNIVERSIDADE DO PORTO

GEOMETRY AND TOPOLOGY SEMINAR

Mixed Hodge structures on symmetric products

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Abstract. In this talk, we will cover some results on the nature of mixed Hodge structures on the cohomology of complex quasi-projective varieties. Specifically, we will be interested in varieties whose cohomology behaves as an exterior algebra. For those, we will manage to deduce the mixed Hodge structure on their symmetric products. These results will allow us to obtain a general formula for the mixed Hodge structure of free abelian character varieties for some reductive groups. We will study this formula in some detail for $G = \mathrm{Sp}(n, \mathbb{C})$, a case handled by me and C. Florentino by adapting our results for $G = \mathrm{GL}(n, \mathbb{C})$ and $\mathrm{SL}(n, \mathbb{C})$. Another interesting class of varieties whose cohomology is an exterior algebra is given by connected complex linear algebraic groups. For those, we will calculate the mixed Hodge structure on their symmetric products, and so obtain some facts on their motivic Zeta function — a very good example of what is mentioned by Ravi Vakil as a “baby motif”.

FRIDAY, MARCH 02

15H30

Room 1.09

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