

BOREL-FIXED IDEALS

ABSTRACT. Borel-fixed ideals are important ideals in the polynomial ring $R = k[x_1, \dots, x_n]$. On the one hand, they are invariant under the action of the Borel group of upper triangular matrices, so they occur as generic initial ideals and many questions about arbitrary ideals can be reduced to the Borel case. On the other hand, they are monomial ideals whose generators satisfy a combinatorial condition which allows us to study and answer those questions more easily. I'll explore the combinatorial side of Borel ideals.