

# THE GENERALIZED MUKAI CONJECTURE FOR SYMMETRIC VARIETIES

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ABSTRACT. The generalized Mukai conjecture due to Bonavero, Casagrande, Debarre, and Druel gives an inequality relating the dimension, the Picard number, and the pseudo-index of smooth Fano varieties and explicitly describes the cases of equality. We associate to any complete spherical variety  $X$  a certain nonnegative rational number  $p(X)$ , which we conjecture to satisfy the inequality  $p(X) \leq \dim X - \operatorname{rank} X$  with equality holding if and only if  $X$  is isomorphic to a toric variety. We show that, for spherical varieties, our conjecture implies the generalized Mukai conjecture. We are able to prove our conjecture for symmetric varieties. This is joint work with Johannes Hofscheier.