APPROXIMATION OF SMOOTH MAPS 
BY REAL ALGEBRAIC MORPHISMS 

WOJCIECH KUCHARZ AND KAMIL RUSEK 

ABSTRACT. Let \( G_{p,q}(F) \) be the Grassmann space of all \( q \)-dimensional \( F \)-vector subspaces of \( F^p \), where \( F \) stands for \( \mathbb{R} \), \( \mathbb{C} \) or \( \mathbb{H} \) (the quaternions). Here \( G_{p,q}(F) \) is regarded as a real algebraic variety. The paper investigates which \( C^1 \) maps from a nonsingular real algebraic variety \( X \) into \( G_{p,q}(F) \) can be approximated, in the \( C^\infty \) compact-open topology, by real algebraic morphisms.