

**Kozłowski, Andrzej; Yamaguchi, Kohhei****Spaces of equivariant algebraic maps from real projective spaces into complex projective spaces.** (English) [Zbl 1311.55009](#)

RIMS Kôkyûroku Bessatsu B39, 51-61 (2013).

The inclusion map of the space of holomorphic maps  $\text{Hol}(\mathbb{C}P^m, \mathbb{C}P^n)$ , between complex projective spaces of dimensions  $1 \leq m \leq n$ , into the corresponding space of continuous maps  $\text{Map}(\mathbb{C}P^m, \mathbb{C}P^n)$ , is a homotopy equivalence up to a certain dimension. The history of such results dates back to a fundamental paper by *G. Segal* [Acta Math. 143, 39–72 (1979; [Zbl 0427.55006](#))].

A similar result for the homotopy type of the space of algebraic maps  $\text{Alg}(\mathbb{R}P^m, \mathbb{R}P^n)$ , between real projective spaces of dimensions  $2 \leq m \leq n$ , compared to the homotopy type of the space of continuous maps  $\text{Map}(\mathbb{R}P^m, \mathbb{R}P^n)$ , was obtained by the authors in collaboration with *M. Adamaszek* [Q. J. Math. 62, No. 4, 771–790 (2011; [Zbl 1245.14060](#))].

In this paper, the authors improve and extend similar results in their earlier paper [Contemp. Math. 519, 145–164 (2010; [Zbl 1209.55005](#))] approximating the homotopy type of the space of real algebraic maps  $\text{Alg}(\mathbb{R}P^m, \mathbb{C}P^n)$ ,  $2 \leq m \leq 2n$ , with the homotopy type of the space of continuous maps  $\text{Map}(\mathbb{R}P^m, \mathbb{C}P^n)$ .

Reviewer: [Vagn Lundsgaard Hansen \(Lyngby\)](#)**MSC:**[55P10](#) Homotopy equivalences in algebraic topology[55R80](#) Discriminantal varieties and configuration spaces in algebraic topology[55P35](#) Loop spaces

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**Keywords:**[algebraic map](#); [homotopy equivalence](#)**Full Text:** [arXiv](#)