

K-THEORY OF REAL GRASSMANN MANIFOLDS

ABSTRACT. Let $G_{n,k}$ denote the real Grassmann manifold consisting of all k -dimensional vector subspaces in the real vector space \mathbb{R}^n . We put the standard inner product on \mathbb{R}^n . We have the identification of $G_{n,k}$ with the homogeneous space $SO(n)/S(O(k) \times O(n-k))$ where $O(k) \times O(n-k)$ is the subgroup of the orthogonal group $O(n)$ that stabilises the subspace \mathbb{R}^k , spanned by the first k standard basis vectors, and $S(O(k) \times O(n-k)) = SO(n) \cap O(k) \times O(n-k)$.

In this talk, I aim to discuss the complex K -ring of $G_{n,k}$, when $n \equiv 0 \pmod{4}$, $k \equiv 1 \pmod{2}$. If time permits, I will describe the K -ring for the rest of the cases up to a small indeterminacy. This is joint work with Parameswaran Sankaran.