

Gottlieb groups of projective spaces

Juno Mukai (Shinshu University)

As subgroups of the homotopy group $\pi_k(X)$, Gottlieb defined the evaluation subgroup $G_k(X)$ and the P -group $P_k(X)$ such that $G_k(X) \subseteq P_k(X)$. The purpose of this talk is to try determining $G_k(\mathbb{F}P^n)$, where $\mathbb{F}P^n$ is the n -projective space over $\mathbb{F} = \mathbb{R}$ (real), \mathbb{C} (complex), \mathbb{H} (quaternion). The key to determining the Gottlieb group depends on Siegel's result. Our idea is a slight extension of Lang's observation. The P -groups of $\mathbb{F}P^n$ is obtained by the formulas of Barratt-James-Stein. We use the classical homotopy theory methods.