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Antipodal sets of compact symmetric spaces

An antipodal set is a subset A of a symmetric space which satisfies $s_x(y) = y$ for any $x, y \in A$, where s_x denotes the symmetry at x . In the joint research with H. Tasaki, we have been studying antipodal sets of compact symmetric spaces. In the first half of this talk, we summarize our results related to antipodal sets of compact symmetric spaces. In the second half, we explain the classification of maximal antipodal sets of a compact symmetric space M , when M is one of $U(n)/O(n)$, $U(2n)/Sp(n)$, and their quotient spaces. We explicitly describe a representative of each congruence class of maximal antipodal sets.

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