

**Matsuki, Toshihiko**

**Orbits on flag manifolds.** (English) [Zbl 0745.22010](#)

Proc. Int. Congr. Math., Kyoto/Japan 1990, Vol. II, 807-813 (1991).

[For the entire collection see [Zbl 0741.00020](#).]

The paper summarizes recent results by Matsuki, Oshima, Uzawa, Brion, Vinberg on the space  $H \backslash G/P$  of double cosets of a connected real semisimple Lie group  $G$ . Here  $P$  is a minimal parabolic subgroup of  $G$ ,  $G/P$  is the corresponding flag manifold, and  $H$  is (almost) the fixed point subgroup of an involutive automorphism of  $G$ . Among the topics discussed here (often without proof) are:

- the “symbol” of a double coset, when  $G$  is a complex classical group ( $G = GL(n, \mathbb{C})$ ,  $SO(n, \mathbb{C})$  or  $Sp(n, \mathbb{C})$ ).
- Uzawa’s function and vector field on  $G/P$ ,
- spherical subgroups of a complex semisimple Lie group  $G$ .

Reviewer: [F.Rouvière \(Nice\)](#)

**MSC:**

- [22E46](#) Semisimple Lie groups and their representations
- [14M15](#) Grassmannians, Schubert varieties, flag manifolds
- [53C30](#) Differential geometry of homogeneous manifolds

Cited in **2** Reviews  
Cited in **10** Documents

**Keywords:**

double cosets; connected real semisimple Lie group; parabolic subgroup; flag manifold; complex semisimple Lie group