

Double cosets of stabilizers of totally isotropic subspaces in a special unitary group. Geometrical approach

Nikolai Gordeev

Let D be a division algebra with an involution and with the centre F and let V be a finite dimensional vector space with a symmetric or skew-symmetric hermitian form. Further, let h be isotropic and let P_u, P_v be the stabilizers of totally isotropic subspaces $u, v \leq V$ in the group $SU(D, h)$. Here we consider the “geometrical” description of double cosets $P_u g P_v$ where $g \in SU(D, h)$. Namely, such a coset is defined uniquely by the dimension and the Witt index of the space $u + g(v)$ (with one exception). The “adherence” of double cosets is also defined by geometrical parameters.

Nikolai Gordeev
Russian State Pedagogical University),
Naberezhnaya reki Mojka, 48, 109028,
St.Petersburg, Russia
e-mail: nickgordeev@mail.ru