TRIPLES IN THE SHILOV BOUNDARY OF BOUNDED SYMMETRIC DOMAINS

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ABSTRACT. If D is a finite-dimensional bounded symmetric domain and S its Shilov boundary, then the group G of automorphisms of D also acts on S and therefore on the set of triples in S. We report on a recent project with J.L. Clerc, where we classify the G-orbits in the space of triples in S. For the special cases where D is the open unit ball in the space of all n times n complex matrices, the Shilov boundary S is the group U(n), and this essentially amounts to the fact that triples of unitary matrices can be diagonlized simultaneously under the action of the group U(n,n), acting by fractional linear maps. The classification of triples leads in particular to an axiomatic description of the Maslov index introduced by J.L. Clerc and B. Oersted.