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### **On Semisimple Invariant $CR$ Structures of Maximal Rank on the Compact Symplectic Group**

We characterize semisimple invariant  $CR$  structures of maximal rank on the compact symplectic group  $USp_{2n}(\mathbb{C})$  for  $n \neq 4$ . This is equivalent to characterizing complex semisimple subalgebras of maximal dimension in  $\mathfrak{sp}_{2n}(\mathbb{C})$  having trivial intersection with  $\mathfrak{usp}_{2n}(\mathbb{C})$ . We conjecture that our classification remains valid for  $n = 4$ . This extends previous results by Ounaïes-Khalgui and the author for the compact groups  $SU_n(\mathbb{C})$  and  $SO_n(\mathbb{R})$ .

**Keywords:** Compact Lie group,  $CR$  structure, representations of simple Lie algebras.

**MSC:** 17B10, 22E99, 32V05.