

Gray, Alfred

A property of a hypothetical complex structure on the six sphere. (English) Zbl 0891.53018
Boll. Unione Mat. Ital., VII. Ser., B 11, No. 2, Suppl., 251-255 (1997).

A long standing problem in differential geometry is the existence of a complex structure on the six-dimensional sphere S^6 . Several proofs have been given, but none has been accepted by the mathematical community. In this paper, the author supposes that there exists a complex structure on the six-sphere. For such a hypothetical complex structure, Dolbeault cohomology groups $H^{p,q}(S^6)$ would be defined. It is proved that then $\dim H^{0,1}(S^6) \geq 1$.

Reviewer: [M.Fernandez \(Bilbao\)](#)

MSC:

- [53C15](#) General geometric structures on manifolds (almost complex, almost product structures, etc.)
- [53C55](#) Global differential geometry of Hermitian and Kählerian manifolds

Cited in **1** Review
Cited in **3** Documents

Keywords:

6-sphere; complex structure; Dolbeault cohomology groups