UNIVERSIDAD COMPLUTENSE MADRID

Seminario de Geometría y Topología

The space of almost complex 2-spheres in the 6-sphere

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Abstract. An almost complex map from the 2-sphere to the 6-sphere is a "holomorphic" map (i.e. whose differential commutes with the (almost-)complex structures) with respect to the usual complex structure of the 2-sphere and the almost complex structure of the six sphere inherited from the octonions. Such maps are, in particular, harmonic, and their area is known to be $4\pi d$, where d is a positive integer. I will study the moduli space of almost complex maps from the 2-sphere to the 6-sphere of a given area, calculate the dimension of this space, and construct explicit examples for every value of d. In the process we will find some interesting characterizations of the almost complex condition.

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