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论文

复格拉斯曼流形$G(2,5)$中的全纯2球

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摘要：

利用调和序列和活动标架研究了复格拉斯曼流形$G(2,5)$中线性满的全纯2球.利用$SU(2)$的不可约酉表示构造了$G(2,5)$中的一些齐性全纯2球.在$U(5)$等价意义下确定常高斯曲率为2/3和4/3的所有线性满的退化全纯2球.最后证明在某一特定条件下常高斯曲率为4/3的非退化的全纯2球一定是$U(5)$等价的.

关键词： 全纯2球 高斯曲率 复格拉斯曼流形 调和序列

Holomorphic 2-spheres in a complex Grassmann manifold $G(2,5)$

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Abstract:

We study the linearly full holomorphic 2-spheres in a complex Grassmann manifold $G(2, 5)$ by using harmonic sequence and moving frames. We construct some examples of homogeneous holomorphic 2-spheres in $G(2, 5)$ by applying the irreducible unitary representations of $SU(2)$. Then, we determine all linearly full degenerate holomorphic 2-spheres with constant Gaussian curvatures of 2/3 and 4/3, up to $U(5)$ equivalence. Moreover, we prove that all non-degenerate holomorphic 2-spheres with constant Gaussian curvature of 4/3 must be $U(5)$ equivalent under some conditions.

Keywords: holomorphic 2-sphere Gaussian curvature complex Grassmann manifold harmonic sequence

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