

جلسه دفاع از رساله دکتری

The Hermitian Yang-Mills Connections on \mathbb{C}^n and Asymptotic Stability on $\mathbb{C}P^n$

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چکیده

In 1984 Donaldson established the first noncompact version of the Kobayashi-Hitchin correspondence between the moduli space of framed Yang-Mills instantons on the four dimensional sphere with the moduli space of holomorphic vector bundles over complex projective plane which are trivial over the complex line at ∞ . Donaldson's proof relies on the Penrose transformation, the Atiyah-Drinfeld-Hitchin-Manin construction of Instantons on the four dimensional sphere S^4 and monad description of holomorphic vector bundles over $\mathbb{C}P^2$. We extend the Donaldson correspondence to higher dimensional complex Euclidian space \mathbb{C}^n in complex dimensions greater than or equal 3. More precisely, we establish a one-to-one correspondence between the moduli space of Hermitian-Yang-Mills connections on \mathbb{C}^n whose curvatures decay quadratically at ∞ and their tangent cones at ∞ have trivial holonomy with the moduli space of holomorphic vector bundles on $\mathbb{C}P^n$ whose restrictions to the Hyperplane at ∞ are stable in the sense of Mumford and Takemoto.

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