Kazama, H.; **Kim, D. K.**; **Oh, C. Y.**
Some remarks on complex Lie groups. (English) Zbl 0957.32010
Nagoya Math. J. 157, 47-57 (2000).

Two main results are shown in this paper. First it is shown that there exists a complete Kähler metric on any complex Lie group. Second one obtains a plurisubharmonic exhaustion function on any complex Lie group as follows. Let k the real Lie algebra of a maximal compact real Lie subgroup K of a complex Lie group G. Put $q := \dim_{\mathbb{C}} k \cap \sqrt{-1}k$. Then one obtains a plurisubharmonic, strongly $(q+1)$-pseudoconvex – in the sense of Andreotti-Grauert – and K-invariant exhaustion function on G, using an integral method with respect to Haar measure on G.

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MSC:

32M05 Complex Lie groups, group actions on complex spaces
32U10 Plurisubharmonic exhaustion functions
32F10 q-convexity, q-concavity

Keywords:

complete Kähler metric; complex Lie group; plurisubharmonic exhaustion function

Full Text: DOI

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