

Cartan Domains and Indefinite Euclidean Spaces

ANDREA LOI, MICHELA ZEDDA

Dipartimento di Matematica e Informatica, Università di Cagliari, Italy
loi@unica.it, michela.zedda@gmail.com

Presented by Manuel de León

Received November 18, 2008

Abstract: We prove that the complex hyperbolic space is the only Cartan domain which admits a Kähler immersion into the indefinite complex Euclidean space of finite index.

Key words: Kähler metrics; bounded domains; diastasis function; symmetric space; complex space form.

AMS *Subject Class.* (2000): 53C55, 58C25.

REFERENCES

- [1] M. BARROS, A. ROMERO, Indefinite Kähler manifolds, *Math. Ann.* **261** (1982), 55–62.
- [2] E. CALABI, Isometric imbedding of complex manifolds, *Ann. of Math.* **58** (1953), 1–23.
- [3] A. J. DI SCALA, A. LOI, Kähler maps of Hermitian symmetric spaces into complex space forms, *Geom. Dedicata* **125** (2007), 103–133.
- [4] A. LOI, M. ZEDDA, Kähler-Einstein submanifolds of the infinite dimensional projective space, arXiv:0811.0674v1 [math.DG] (2008).
- [5] A. ROMERO, Y. J. SUH, Differential geometry of indefinite complex submanifolds in indefinite complex space forms, *Extracta Math.* **19** (3) (2004), 339–398.
- [6] A. WANG, W. YIN, L. ZHANG, G. ROOS, The Kähler-Einstein metric for some Hartogs domains over bounded symmetric domains, *Sci. China Ser. A* **49** (2006), 1175–1210.
- [7] M. UMEHARA, Diastases and real analytic functions on complex manifolds, *J. Math. Soc. Japan* **40** (3) (1988), 519–539.