

# On Carleson-type embeddings for Bergman spaces of harmonic functions

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Given a measure  $\mu$  on a bounded domain  $\Omega \subset \mathbb{R}^n$  with  $C^1$  boundary we investigate the following problem: when is a weighted harmonic Bergman space  $A_\alpha^p(\Omega)$  continuously embedded in weighted space  $L^p(\Omega) = L^p(\mu, \Omega)$ ? We give a sufficient Carleson type condition for all  $\alpha > -1$  and  $0 < p < \infty$  which is also necessary for  $p > 1 + \frac{\alpha+2}{n-2}$ .

## References

- [1] M. Arsenovic, R. F. Shamoyan, On embeddings, traces and multipliers in harmonic function spaces, *Kragujevac J. Math.* **37**(1) (2013), 45–64.
- [2] R. Coifman and R. Rochberg, Representation theorems for holomorphic and harmonic functions in  $L^p$ , *Asterisque* **77** (1980), 11–66.
- [3] M. Jevtic and M. Pavlovic, Harmonic Bergman functions on the unit ball in  $R^n$ , *Acta Math. Hungar.* **85**(1-2) (1999), 81–96.
- [4] S.H. Kang, J.Y. Kim, Harmonic Bergman spaces of the half-spaces and their some operators, *Bull. Korean Math. Soc.* **38**(4) (2001), 773–786.
- [5] H. Koo, K. Nam, H.Yi, Weighted harmonic Bergman kernel on half-spaces, *J. Math. Soc. Japan* **58**(2), 2006, 351–362.
- [6] E. M. Stein, *Harmonic Analysis, Real Variable Methods, Orthogonality, and Oscillatory Integrals*, Princeton Univ. Press, Princeton, NJ, 1993.
- [7] K. Zhu, *Spaces of Holomorphic Function in the Unit Ball*, Springer-Verlag New York, 2005.