Zeitschrift: L'Enseignement Mathématique

Herausgeber: Commission Internationale de l'Enseignement Mathématique

Band: 31 (1985)

Heft: 1-2: L'ENSEIGNEMENT MATHÉMATIQUE

Artikel: HODGE DECOMPOSITION ON STRATIFIED LIE GROUPS

Autor: Duddy, John

Bibliographie

DOI: https://doi.org/10.5169/seals-54573

We may set $g = D_1^* Kf$. Using the same notation as in the preceding theorem we have

$$(f, D_2^* D_2 Kf)_2 = \lim_{R \to \infty} (f, D_2^* D_2 Kf)_{D(R), 2}$$
$$= \lim_{R \to \infty} \left((D_2 f, D_2 Kf)_{D(R), 3} + (f, \sigma(D_2^*, d|x|) D_2 Kf)_{S(R), 2} \right)$$
$$= \lim_{R \to \infty} (f, \sigma(D_2^*, d|x|) D_2 Kf)_{S(R), 2} \quad (\text{since } D_2 f = 0).$$

The same argument as in Theorem 6 proves that the limit is zero. This proves the theorem.

REFERENCES

[1] Atiyah, M. F. and R. Bott. A Lefschetz fixed point formula for elliptic complexes, I, II. *Ann. of Math. 86* (1967), 347-407; *88* (1968), 451-491.

[2] Dadok, J. and R. Harvey. The fundamental solution for the Kohn-Laplacian $\Box_b$ on the sphere in $\mathbf{C}^n$. *Math. Ann. 244* (1979), 89-104.

[3] de Rham, G. *Variétés Différentiables.* Paris: Hermann & C^{ie}, 1955.

[4] Duddy, J. A. *The boundary Laplacian on the Heisenberg group and the sphere.* Ph. D. dissertation, Columbia University, 1978.

[5] Dolbeault, P. Sur la cohomologie des variétés analytiques complexes. *C. R. Acad. Sci. Paris 236* (1953), 175-177.

[6] Folland, G. B. and J. J. Kohn. *The Neumann Problem for the Cauchy-Riemann Complex.* Princeton, N.J.: Princeton University Press, 1972.

[7] Folland, G. B. and E. M. Stein. Parametrices and estimates for the $\bar{\partial}_b$ complex on strongly pseudoconvex boundaries. *Bull. Amer. Math. Soc. 80* (1974), 253-258.

[8] Folland, G. B. Estimates for the $\bar{\partial}_b$ complex and analysis on the Heisenberg group. *Comm. Pure Appl. Math. 27* (1974), 429-522.

[9] —— Subelliptic estimates and function spaces on nilpotent Lie groups. *Ark. Math. 13* (1975), 161-207.

[10] Greenfield, S. J. Cauchy-Riemann equations on several variables. *Ann. Scuola Norm. Pisa 22* (1968), 275-314.

[11] Harvey, R. and J. Polking. Fundamental solutions in complex analysis I and II. *Duke Math. J. 46* (1979), 253-340.

[12] Hodge, W. V. D. *The Theory and Applications of Harmonic Integrals.* New York: Cambridge University Press, 1941 (2d ed., 1952).

[13] Kodaira, K. Harmonic fields in Riemannian manifolds (generalized potential theory). *Ann. of Math. 50* (1949), 587-665.

[14] Kohn, J. J. and H. Rossi. On the extension of holomorphic functions from the boundary of a complex manifold. *Ann. of Math. 81* (1965), 451-472.

[15] Lewy, H. An example of a smooth linear partial differential equation without solution. *Ann. of Math. 66* (1957), 155-158.

[16] ROTHSCHILD, L. P. and E. M. STEIN. Hypoelliptic differential operators and nilpotent groups. *Acta Math. 137* (1976), 247-320.
[17] SPENCER, D. C. Harmonic integrals and Neumann problems associated with linear p.d.e. *Outlines of Joint Soviet-American Symposium on P.D.E.*, 1963, 253-260.
[18] WELLS, R. O., Jr. *Differential Analysis on Complex Manifolds.* Englewood Cliffs, N.J.: Prentice-Hall, 1973.

(Reçu le 29 octobre 1984)

John Duddy

Department of Mathematics
De Paul University
Chicago, Illinois 60614 (USA)

vide-leer-empty