

Christ, Michael

The Szegő projection need not preserve global analyticity. (English) Zbl 0851.32024

Ann. Math. (2) 143, No. 2, 301-330 (1996).

Let Ω be a pseudoconvex domain in \mathbb{C}^n with real analytic boundary $\partial\Omega$ and $H^2(\partial\Omega)$ be the closed subspace of $L^2(\partial\Omega)$, consisting of those functions that extend holomorphically to Ω . The Szegő projection S is the orthogonal projection from $L^2(\partial\Omega)$ onto $H^2(\partial\Omega)$ with respect to the Hilbert space structure induced by the surface measure on $\partial\Omega$. It is known that if $f \in C^\infty$ on $\partial\Omega$, then also $Sf \in C^\infty$ on $\partial\Omega$ [*J. J. Kohn*, *Proc. Symp. Pure Math.* 43, 207-217 (1985; [Zbl 0571.58027](#))].

The main result of the author is: There exists a bounded pseudoconvex domain Ω in \mathbb{C}^2 with real analytic boundary and a real analytic function f on $\partial\Omega$ such that Sf is not real analytic.

Reviewer: [A.Džuraev \(Berlin\)](#)

MSC:

[32A25](#) Integral representations; canonical kernels (Szegő, Bergman, etc.)

[32T99](#) Pseudoconvex domains

Cited in **1** Review
Cited in **11** Documents

Keywords:

[Szegő projection](#)

Full Text: [DOI](#)