

1067-47-176

M Anthony Gilliam* (zzwarg@gmail.com), University of Montana, Department of Mathematical Science MMAI01, Mathematics Building, Missoula, MT 59812, and **Jennifer Halfpap** (halfpap@mso.umt.edu), University of Montana, Department of Mathematical Sciences MMAI01, Mathematics Building, Missoula, MT 59812. *The Szegö Kernel for Certain Non-Pseudoconvex domains in \mathbb{C}^2 .*

The Szegö projection operator associated with a domain Ω in \mathbb{C}^n is of fundamental interest in complex analysis. Its action can often be expressed as integration against a distribution on $\partial\Omega \times \partial\Omega$ which is equal to a smooth function off of some exceptional set. Understanding the nature of this set and obtaining sharp size estimates on the kernel for points near this set is essential for understanding the mapping properties of the operator. The problem is fairly well-understood for pseudo-convex domain of finite type, where the exceptional set consists of the diagonal of $\partial\Omega \times \partial\Omega$. Comparatively little is known for non-pseudoconvex domains. In this talk, we discuss the latter for a subclass of domains in \mathbb{C}^2 and show, in particular, that the exceptional set contains points off of the diagonal. (Received July 28, 2010)