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*Bergman and Szego kernels on tubular domains near points of infinite type*

In joint work with Jennifer Halfpap and Stephen Wainger, we obtain estimates for the Bergman and Szegö kernels in domains of the form

$$\Omega = \left\{(z_1, z_2) \in \mathbb{C}^2 \;\middle|\; \Im[z_2] > b(\Re[z_1])\right\}$$

where $b \in \mathcal{C}^\infty(\mathbb{R})$ is convex and even, with $b''(r) > 0$ for $|r| > 0$ and $b^{(n)}(0) = 0$ for all non-negative integers $n$. For example, if $b_\alpha(r) = \exp(-|r|^{-\alpha})$ for $|r|$ small, we show that the Bergman and Szegö kernels have singularities away from the diagonal of the boundary of $\Omega$ if and only if $\alpha \geq 1$.