Asymptotic behavior of Bergman kernels with logarithmic weight

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A description of the boundary behavior of Bergman kernels on strongly pseudoconvex domains is vitally important for many applications. Unfortunately, results for kernels with respect to non-trivial weights are still unknown. There exist only partial results for weights of the form $w = d^\alpha e^g$, where d denotes the distance from the boundary of the domain, $\alpha > -1$, and g is a function smooth on the closure; and, more generally, also for weights of the same form, but with "logarithmic" singularities allowed in terms of higher order. We present a result for weights that have logarithmic singularity in the main term, in the simplest case of a radially symmetric weight on the unit disc.