1128-32-138   **Peter Ebenfelt*** (`pebenfelt@ucsd.edu`), Department of Mathematics, University of California San Diego, La Jolla, CA 92093. *The Bergman kernel and the obstruction function in strictly pseudoconvex domains in $\mathbb{C}^2$.* Preliminary report.

We will consider bounded strictly pseudoconvex domains Ω in $\mathbb{C}^2$. The obstruction function $b\eta_1$ on $\partial\Omega$ is the lowest order term in the singularity at the boundary of the Cheng-Yau solution to the Dirichlet problem for Fefferman's Monge-Ampere operator in Ω. By the work of Graham and Hirachi-Komatsu-Nakzawa, this function is also the restriction to the boundary of the log term in the Bergman and Szegő kernels in Ω. We shall discuss the condition $b\eta_1 = 0$ on $\partial\Omega$; in particular, if Ω also has transversal symmetry, then we will show that if $b\eta_1 = 0$ globally, then $\partial\Omega$ is locally spherical. We note that it is not true that $b\eta_1 = 0$ locally implies that $\partial\Omega$ is locally spherical. (Received February 22, 2017)

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