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Peter Ebenfelt* (pebenfelt@ucsd.edu), Department of Mathematics, University of California, San Diego, La Jolla, CA 92093-0112. *The obstruction function and deformations of three-dimensional strictly pseudoconvex CR manifolds*. Preliminary report.

The obstruction function on the (smooth) boundary of a strictly pseudoconvex domain in \mathbb{C}^n arises as the obstruction to smoothness up to the boundary of the Cheng-Yau solution to a particular Dirichlet problem. Graham showed that the obstruction function is actually a local CR invariant on the boundary. In \mathbb{C}^2 , this function occurs also as the lowest order term in the Bergman kernel (and the Szegő kernel, properly defined). Moreover, it arises in variational formulas for global invariants such as Q'-curvature and the Burns-Epstein invariant under deformations. In this talk, we will explain this, and discuss what can be gleaned from the vanishing of the obstruction function. (Received September 26, 2017)