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Peter Ebenfelt* (pebenfelt@ucsd.edu), Department of Mathematics, University of California, San Diego, La Jolla, CA 92093-0112. *Umbilical points on perturbations of the sphere in \mathbb{C}^2* . Preliminary report.

The standard CR structure on the three dimensional sphere can be deformed in such a way that the deformed structures have no (CR) umbilical points. A 1-parameter family of such deformations was essentially discovered by E. Cartan (and later studied by Cap, Isaev, Jacobowitz). The CR manifolds in this family, however, cannot be embedded in \mathbb{C}^2 . It is an open question whether the unit sphere can be perturbed in \mathbb{C}^2 such that no umbilical points remain on the perturbed CR manifolds. In this talk, we shall discuss an approach to this problem. (Received February 15, 2016)