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Wayne Stewart Smith* (wayne@math.hawaii.edu), Department of Mathematics, 2565 The Mall, Honolulu, HI 96822, and **Alexander Volberg**. *A conformal mapping problem with applications to composition operators*. Preliminary report.

The following question arose in the study of composition operators acting on certain Hilbert spaces $L^2(\mu_p)$ of analytic functions on the unit disk: Suppose φ and ψ are Riemann maps from the unit disk \mathbb{D} onto the same domain G such that φ'/ψ' is bounded. Does it follow that ψ'/φ' is bounded? An example will be constructed to show the answer to this question is “No”. The consequence for composition operators is that there is an automorphism σ of the disk that induces a bounded composition operator on $L^2(\mu_p)$, while its formal inverse, the composition operator induced by σ^{-1} , is not bounded. (Received February 23, 2010)