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Liming Sun* (ls680@math.rutgers.edu), 110 Frelinghuysen Rd., Piscataway, NJ 08854, and
Xuezhang Chen. *Existence of conformal metrics with constant scalar curvature and constant boundary mean curvature on compact manifolds.*

We study the problem of deforming a Riemannian metric to a conformal one with nonzero constant scalar curvature and nonzero constant boundary mean curvature on a compact manifold of dimension $n \geq 3$. We prove the existence of such conformal metrics in the cases of $n = 6, 7$ or the manifold is spin and some other remaining ones left by Escobar. Furthermore, in the positive Yamabe constant case, by normalizing scalar curvature to be 1, there exists a sequence of conformal metrics such that their constant boundary mean curvatures go to $+\infty$. This fact can partially answer the Han-Li conjecture. (Received March 18, 2017)