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New existence results on conformal metrics with constant interior scalar curvature and constant boundary mean curvature

Let (M^n, g_0) be a compact Riemannian manifold with boundary ∂M. We consider the problem of looking for a metric g on M conformal to g_0 and having constant scalar curvature c_1 on M and constant mean curvature c_2 on ∂M. This is a generalization of the Yamabe problem to manifolds with boundary. Previous results related to this problem were obtained by J. Escobar in the case $c_2 = 0$ and c_1 appropriately normalized, or in the case $c_1 = 0$ and c_2 appropriately normalized. We present new results on the existence and apriori estimates of such metrics on almost all manifolds for any prescribed c_2(after c_1 has been appropriately normalized). This is joint work with Yanyan Li.