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Chenxu He* (chenxuhe@math.ucr.edu), Department of Mathematics, 202 Surge, University of California at Riverside, Riverside, CA 92521. *Fundamental gap of convex domains in the Riemannian manifold.*

For a bounded convex domain on a Riemannian manifold, the fundamental gap is the difference of the first two non-trivial Dirichlet eigenvalues. In their celebrated work, B. Andrews and J. Clutterbuck proved the fundamental gap conjecture for convex domains in the Euclidean space, showing that the gap is at least as large as the one for a one-dimensional model. They also conjectured that similar results hold for spaces with constant sectional curvature. Very recently, for a convex domain on the round sphere, it is proved that the fundamental gap is greater than the gap of the one dimensional sphere model, in particular, $\geq 3\pi^2/D^2$, based on the work of Dai, He, Seto, Wei and Wang. The talk is based on the joint work with Guofang Wei at UC Santa Barbara. (Received September 22, 2017)