## Riemannian Invariants that Characterize Rotational Symmetries of the Standard Sphere

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Inspired by the Lichnerowicz-Obata theorem for the first eigenvalue of the Laplacian, we define a new family of invariants  $\Omega_k(g)$  for closed Riemannian manifolds. The value of  $\Omega_k(g)$  sharply reflects the spherical part of the manifold. Indeed,  $\Omega_1(g)$  and  $\Omega_2(g)$  characterize the standard sphere. In this talk, we will introduce some properties of these Riemannian invariants.