

# Multiple solutions of the singular Yamabe problem on spheres via topological and analytical techniques

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I will discuss a topological proof of the existence of infinitely many complete metrics in  $S^m \setminus S^k$ ,  $m \geq 5$  and  $1 \leq k < \frac{m-2}{2}$  having constant scalar curvature, and conformal to the round metric. For the case  $k = 1$ , I will show how to use bifurcation theory to obtain the existence of uncountably many branches of solutions of the problem.