Hardy-Sobolev equation on riemannian manifolds.

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Let (M, g) be a closed Riemannian manifold of dimension at least 3. Let S be the union of the focal submanifolds of an isoparametric function on (M, g). In this talk we are going to discuss results on the existence of solutions of the Hardy-Sobolev type equation

$$\Delta_g u + K(x)u = \frac{u^{q-1}}{(d_S(x))^s},$$

where Δ_g is the Laplace-Beltrami operator, $d_S(x)$ is the distance from x to S, K is a continuous function on M and $q > 2$. In particular, we will prove the existence of infinite sign-changing solutions to this equation.

Trabajo en conjunto con Jimmy Petean, CIMAT, Guanajuato, México.