
CRITICAL METRICS OF EIGENVALUE FUNCTIONALS VIA SUBDIFFERENTIAL

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I will present a joint work with Romain Petrides (Université Paris Cité) where we propose a general approach to study mapping properties of critical points of functionals $F(g) = F(S_g)$, where g runs over an open set of Riemannian metrics on a given smooth manifold, S_g is a set of eigenvalues depending on g and F is a locally Lipschitz function. At the core of our approach is Clarke's notion of subdifferential. Our work covers well-known cases, like Laplace and Steklov eigenvalues, and provides promising perspectives on new situations.