
A WEIGHTED REILLY FORMULA FOR DIFFERENTIAL FORMS AND SHARP STEKLOV EIGENVALUE ESTIMATES

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In the talk first we will present how to establish a weighted Reilly formula for differential forms on a compact Riemannian manifold with boundary. Then we give some applications of this formula. One is a sharp lower bound for the first positive eigenvalue of the Steklov eigenvalue problem on differential forms investigated by Belishev and Sharafutdinov (2008) and Karpukhin (2019). A second one is a comparison result between the spectrum of this Steklov eigenvalue problem and the spectrum of the Hodge Laplacian on the boundary of the manifold. At the end we discuss an open problem for differential forms analogous to Escobar's conjecture (1999) for functions. The talk will be mainly based on the preprint [arXiv:2312.16780](https://arxiv.org/abs/2312.16780).