Upper bounds for Steklov eigenvalues

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I will explain two upper bounds for the Steklov eigenvalues of a compact Riemannian manifold with boundary. The first is in terms of the extrinsic diameters of the boundary, its injectivity radius and the volume of the manifold. By applying these bounds to cylinders over closed manifold, we obtain new bounds for eigenvalues of the Laplace operator on closed manifolds, in the spirit of Berger–Croke. The second involves the volume of the manifold and of its boundary, as well as packing and volume growth constants of the boundary and its distortion. I will take time to give examples in order to explain why the quantities appearing in the inequalities are necessary. This is a joint work with Alexandre Girouard.