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## Vanishing of Quadratic Love Numbers of Schwarzschild Black Holes

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The static tidal response of compact objects is characterized by **tidal Love numbers**, which provide insights into the black hole horizon or the internal structure of compact objects. These numbers can be directly extracted from gravitational wave measurements of compact binaries. It is well-known that asymptotically flat **Schwarzschild black holes in general relativity, in four spacetime dimensions, exhibit a vanishing static induced linear tidal response**. In this talk, I will extend this result to the quadratic response under an arbitrary static tidal field. By matching the second-order black hole perturbation calculations to point-particle effective theory, **we demonstrate that the nonlinear Love numbers describing the quadratic response also vanish**. I will discuss the implications of this result for black hole perturbation theory and gravitational wave phenomenology.

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