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Quasinormal modes from a naked singularity

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What should be the quasinormal modes associated with a spacetime that contains a naked singularity instead of a black hole? In the present work we address this problem by studying the scattering of scalar waves on a curved background described by a Reissner-Nordström spacetime with q>m. We show that there is a qualitative difference between cases with $1< q^2/m^2 < 9/8$ and cases with $q^2/m^2 > 9/8$. We discuss the necessary conditions for the well-posedness of the problem, and present results for the low ℓ and large ℓ limits.