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Counting quaternion algebras

We discuss how classical techniques from analytic number theory can be used to count quaternion algebras over number fields subject to various constraints. Because of the correspondence between maximal subfields of quaternion algebras and geodesics on arithmetic hyperbolic manifolds, these counts have interesting applications to the field of spectral geometry. This talk is based on a recent paper with Benjamin Linowitz, D. B. McReynolds, and Paul Pollack.