

Galerkin-type methods for strictly parabolic equations on compact Riemannian manifolds

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Abstract. We prove existence of weak solutions to the Cauchy problem corresponding to various strictly parabolic equations on a compact Riemannian manifold (M, g) . This also includes strictly parabolic equations with stochastic forcing with linear diffusion. Existence is proved through a variant of the Galerkin method and can be used to construct a convergent finite-element method.

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