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| | abstract | We consider nonlinear diffusive evolution equations posed on bounded space domains, governed by fractional Laplace-type operators, and involving porous medium type nonlinearities. We establish existence and uniqueness results in a suitable class of solutions using the theory of maximal monotone operators on dual spaces. Then we describe the long-time asymptotics in terms of separate-variables solutions of the friendly giant type. As a by-product, we obtain an existence and uniqueness result for semilinear elliptic non local equations with sub-linear nonlinearities. The Appendix contains a review of the theory of fractional Sobolev spaces and of the interpolation theory that are used in the rest of the paper. | abstract | We consider nonlinear diffusive evolution equations posed on bounded space domains, governed by fractional Laplace-type operators, and involving porous medium type nonlinearities. We establish existence and uniqueness results in a suitable class of solutions using the theory of maximal monotone operators on dual spaces. Then we describe the long-time asymptotics in terms of separate-variables solutions of the friendly giant type. As a by-product, we obtain an existence and uniqueness result for semilinear elliptic non local equations with sub-linear nonlinearities. The Appendix contains a review of the theory of fractional Sobolev spaces and of the interpolation theory that are used in the rest of the paper. | | |
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