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The pullback- \mathcal{D} attractors for the 3D Kelvin-Voigt-Brinkman-Forchheimer system with delay. (English) [Zbl 1410.35101](#)

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The authors consider the 3D Kelvin-Voigt-Brinkman-Forchheimer system with continuous delay and prove the existence of pullback- \mathcal{D} attractors. The method of proof involves establishing the existence of pullback- \mathcal{D} absorbing sets and the pullback- \mathcal{D} asymptotic compactness of the associated family of solution processes. The asymptotic compactness result follows the standard decomposition technique for hyperbolic/wave equations treated for non-autonomous source terms (cf. e.g. [V. V. Chepyzhov and M. I. Vishik, *Attractors for equations of mathematical physics*. Providence, RI: American Mathematical Society (AMS) (2002; [Zbl 0986.35001](#))]).

Reviewer: [Joseph Shomberg \(Providence\)](#)

MSC:

[35Q30](#) Navier-Stokes equations

[37L30](#) Infinite-dimensional dissipative dynamical systems–attractors and their dimensions, Lyapunov exponents

[35B40](#) Asymptotic behavior of solutions to PDEs

[35B41](#) Attractors

[35G31](#) Initial-boundary value problems for nonlinear higher-order PDEs

Keywords:

continuous delay; Kelvin-Voigt-Brinkman-Forchheimer system; pullback- \mathcal{D} attractors

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