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Global existence and blow-up for a porous medium system with nonlocal boundary conditions and nonlocal sources. (English) [Zbl 1263.35128](#)

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Summary: This paper is devoted to a porous medium system subject to nonlocal boundary conditions and with nonlocal sources. We investigate global existence and blow-up in finite time of nonnegative solutions by using a sub-super-solution method. Moreover, under appropriate hypotheses for the conditions, we obtain asymptotic properties of the solutions.

MSC:

- [35K45](#) Initial value problems for second-order parabolic systems
- [74H40](#) Long-time behavior of solutions for dynamical problems in solid mechanics
- [35K65](#) Degenerate parabolic equations
- [35K59](#) Quasilinear parabolic equations
- [35B44](#) Blow-up in context of PDEs
- [35R09](#) Integral partial differential equations

Cited in **8** Documents

Keywords:

porous system; nonlocal boundary conditions; nonlocal sources; global existence; finite time blow-up; sub-super-solution method; asymptotic properties

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