Blowing-up solutions of the time-fractional dispersive partial differential equations

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This paper is devoted to the study of initial-boundary value problems for time-fractional analogues of Korteweg-de Vries-Benjamin-Bona-Mahony-Burgers, Rosenau-Korteweg-de Vries-Benjamin-Bona-Mahony-Burgers, Ostrovsky and time-fractional modified Korteweg-de Vries-Burgers equations on a bounded domain. Sufficient conditions for the blowing-up of solutions in finite time of aforementioned equations are presented. We also discuss the maximum principle and in uence of gradient non-linearity on the global solvability of initial-boundary value problems for the time-fractional Burgers equation. The main tool of our study is the Pohozhaev nonlinear capacity method. We also provide some illustrative examples.