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Title: Blow-up Time Bounds for a Strongly Damped Wave Equation with PINNs Validation

Abstract: This work investigates the blow-up behavior of solutions to a strongly damped semi-linear wave equation on bounded domains. By imposing specific conditions on the initial data, we derive both lower and upper estimates for the blow-up time as well as the range of the threshold regions for the nonlinear exponents. Furthermore, our theoretical findings are numerically validated using the Physics-Informed Neural Networks (PINNs) method.