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## **THE NONLINEAR PIEZOELECTRIC TUNED VIBRATION ABSORBER**

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**Summary:** This paper proposes a piezoelectric vibration absorber, termed the nonlinear piezoelectric tuned vibration absorber (NPTVA), for the mitigation of nonlinear resonances of mechanical systems. The new feature of the NPTVA is that its nonlinear restoring force is designed according to a principle of similarity, i.e., the NPTVA should be an electric analog of the primary system. Doing so, a nonlinear generalization of Den Hartog's equal-peak tuning rule is developed. The performance of the NPTVA will be illustrated using a nonlinear system possessing different types of nonlinearities.