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**Modal analysis and transient string response of solid-body electric bass guitars with effects of the instrumentalist**

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This paper documents modal analysis of seven solid-body electric basses. The basses are modeled in one dimension of motion normal to the face of the instrument in both free-free state and with boundary conditions imposed by a musician. The results are compared and analyzed in terms of bending and torsion. Analysis is done regarding open-string harmonic content of the electromagnetic output over time versus the resonant frequencies of the instruments. Results of finite-element analysis modeling of a simplified bass guitar structure will be presented, and significance of damping effects on harmonic output will be considered in terms of the listener.