

Abstract Submitted  
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**Interferometric studies of a piano soundboard** SARAH ZIETLOW,  
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— Electronic speckle pattern interferometry has been used to study the deflection shapes of a piano soundboard. During the experiments the soundboard remained attached to the piano, providing, to our knowledge, the first optical examination of soundboard movement *in situ*. The lowest modes have been studied in detail, and the interferograms have been compared to predictions of a simple model that assumes the soundboard is well approximated by an isotropic plate clamped at the edges. Analysis indicates that this model is insufficient to explain the deflection shapes associated with the resonances of the soundboard. It is shown that a finite element model results in more accurate predictions of the mode shapes, and provides insight into the parameters that are important in determining the final sound of the instrument.

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