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Mechanical oscillations of a viral capsid DARYN BENSON, OTTO SANKEY, Arizona State University, ERIC DYKEMAN — Viruses are submicroscopic infectious agents that infect almost every living creature on Earth. They are unable to grow or reproduce outside of a host cell and are therefore parasitic in nature. A virus' internal genetic material is protected by an external protein coat (capsid). We developed a theoretical model which uses the interaction of light with a viral capsid to create large amplitude motions within the capsid. This work displays the results of the model on the tobacco mosaic virus (TMV) with attached RNA genome. The development of this model was motivated by the experimental work of Tsen et. al. [1] who used ultra-short laser pulses to inactivate viruses. [1] K-T. Tsen et al., J. of Physics – Cond. Mat. 19, 472201 (2007).

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