

Abstract Submitted  
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**The Effect of Sinusoidal Spectral Phase on Photoassociation followed by Excitation**<sup>1</sup> HYOUNGUK JANG, MARC L. TRACHY<sup>2</sup>, GIORGI VESHAPIDZE<sup>3</sup>, CHARLES W. FEHRENBACH, BRETT D. DEPAOLA, Kansas State University — In recent years, the development of ultrafast lasers and quantum control techniques has enhanced the ability to control the interaction between light and matter. In this work we explore the effects of a sinusoidally varying spectral phase on photoassociation followed by excitation (PAE). The measurement consists of using a narrow bandwidth laser to excite the molecular states formed through PAE to autoionizing states, which are then measured with time-of-flight spectroscopy. We observe that the PAE process is an extremely strong function of the sinusoidal spectral phase, showing a contrast ratio in excess of 100.

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