

Abstract Submitted
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Modeling the Effects of Wavenumber Error in IPSII Images¹ BENJAMIN WHETTEN, JAROM JACKSON, Brigham Young University, DALLIN DURFEE, Utah Valley University — Traditional microscopy technology is limited by lenses, which constrain the depth of field and maximum resolution of the image. We are testing an imaging process that avoids these issues by using an interferometer and structured illumination techniques without the use of a lens. This process, called IPSII, is adversely affected by imprecisions in the movements of the mirror mounts that control the interferometer which then produce blur and other inaccuracies in the resulting image. I am modeling this process computationally to better understand the propagation of this error and create a model to predict its effects. By better understanding the effects of this error, I will determine if these imprecisions are the primary limiting factor in the resolution of IPSII images, and if so, how their effects should be minimized.

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