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Multiband Cepheid PL relations from OGLE III measurements and the impact on Hubble's constant R.Q. DIENHOFFER, S. KANBUR, State University of New York, College at Oswego, C. NGEOW, University of Illinois — The Cepheid PL relation is of fundamental importance in estimating Hubble's constant. The Key Project has estimated H_0 with an accuracy of 10%. Recent work has suggested that a CMB independent estimate of H_0 accurate to less than 5% can constrain the equation of state for Dark Energy. In this work, we show that one of the fundamental assumptions underlying the PL relation, that it is linear, is not supported by recent observations. We show that this can affect estimates of H_0 by as much as 1-2%: small but perhaps important in the context of reducing errors on H_0 to less than 5%.

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