

Sixteenth Marcel Grossmann Meeting



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The Hubble constant tension

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An important and unresolved question in cosmology today is whether there is new physics that is missing from our current standard Lambda Cold Dark Matter (LCDM) model. A current discrepancy in the measurement of the Hubble constant, H_0 , could be signaling a new physical property of the universe or, more mundanely, unrecognized measurement uncertainties. I will discuss two of our most precise methods for measuring distances in the local universe: Cepheids and the Tip of the Red Giant Branch (TRGB). I will present new results from the Carnegie-Chicago Hubble Program (CCHP). Using the Hubble Space Telescope Advanced Camera for Surveys, we are using the TRGB to calibrate Type Ia supernovae out into the Hubble flow to provide an independent measurement of H_0 . I will address the uncertainties, discuss the current tension in H_0 , and whether there is need for additional physics beyond the standard LCDM model.

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