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No supernovae? Measuring H_0 from Cepheids, TRGB stars, and masers with BORG peculiar velocities

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The Hubble tension demands fresh, independent routes to H_0 . I present two-rung and one-rung distance ladders that bypass Type Ia supernovae entirely, connecting Cepheid and TRGB distances, as well as geometric maser distances, directly to cosmological redshifts. The first two-rung ladder uses the SH0ES Cepheid sample with Milky Way, LMC, and NGC 4258 anchors, yielding $H_0 = 71.7 \pm 1.3$ km/s/Mpc at 1.8 per cent precision, though the result depends on assumptions about host-sample selection (arXiv:2509.09665). The second two-rung ladder replaces Cepheids with TRGB distances from the Extragalactic Distance Database (Anand et al. 2021), comprising over 500 HST-based measurements within ~ 10 Mpc. The one-rung ladder uses six maser-hosting galaxies whose geometric distances connect directly to H_0 , free of any stellar physics. All ladders share a common inference backbone: a rigorous Bayesian forward model that self-consistently treats sample selection and peculiar velocities, the latter drawn from the Manticore-Local reconstruction based on the BORG algorithm. Together, these SNe Ia-free ladders provide independent, complementary constraints on the origin of the Hubble tension.

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