Examining the Hubble tension with differences in supernova and host galaxies properties

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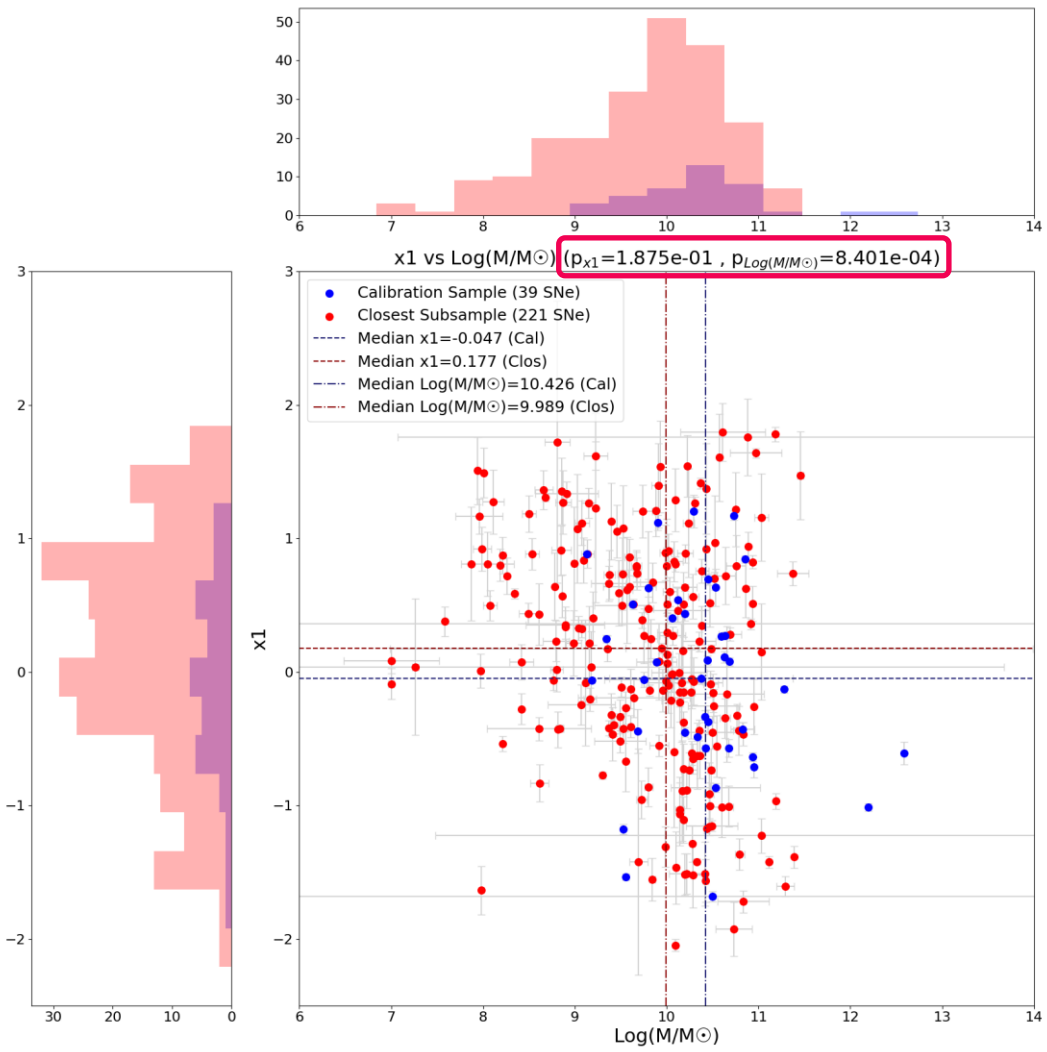
1 - First Results

$H_0 = 74.646^{+0.886}_{-0.901}$ km s^{-1} Mpc^{-1}



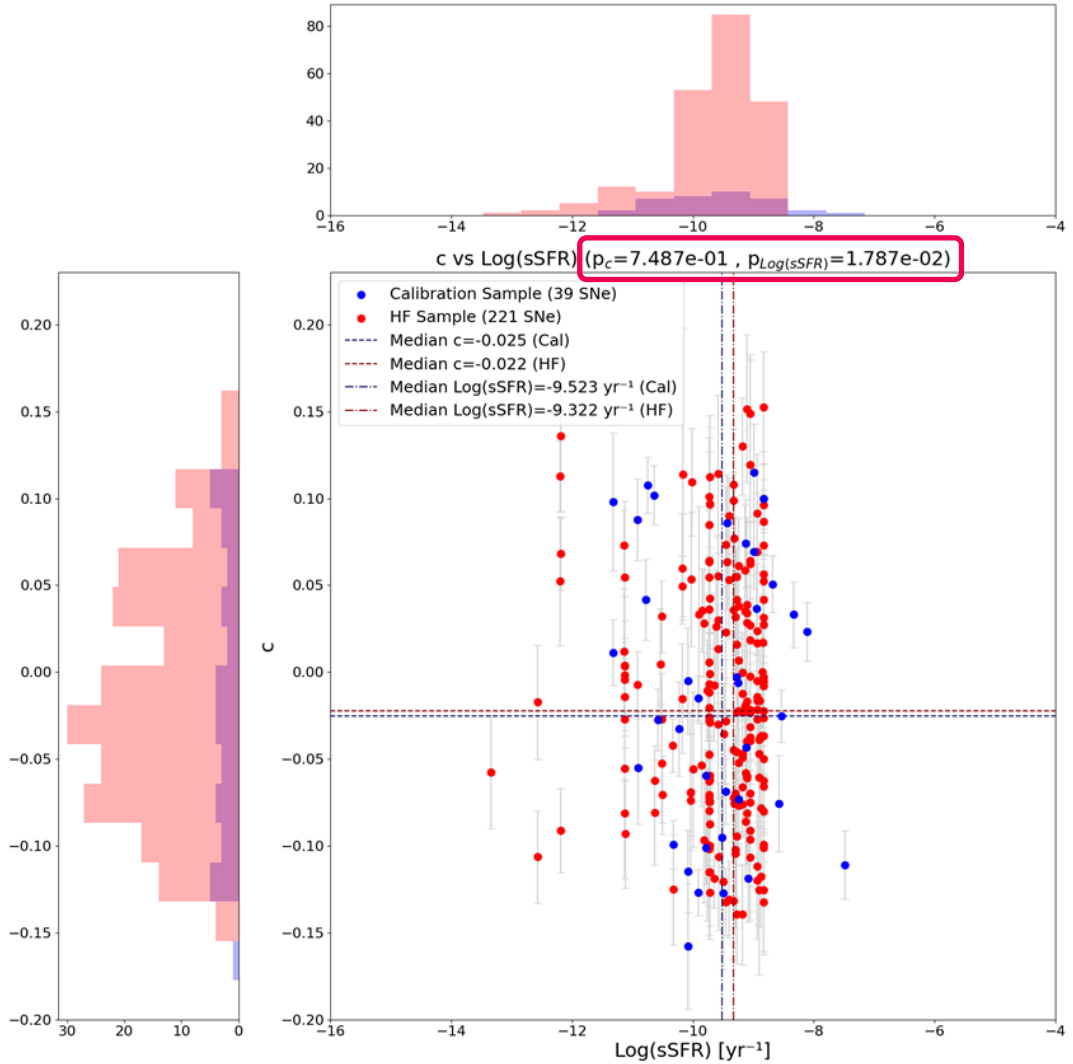
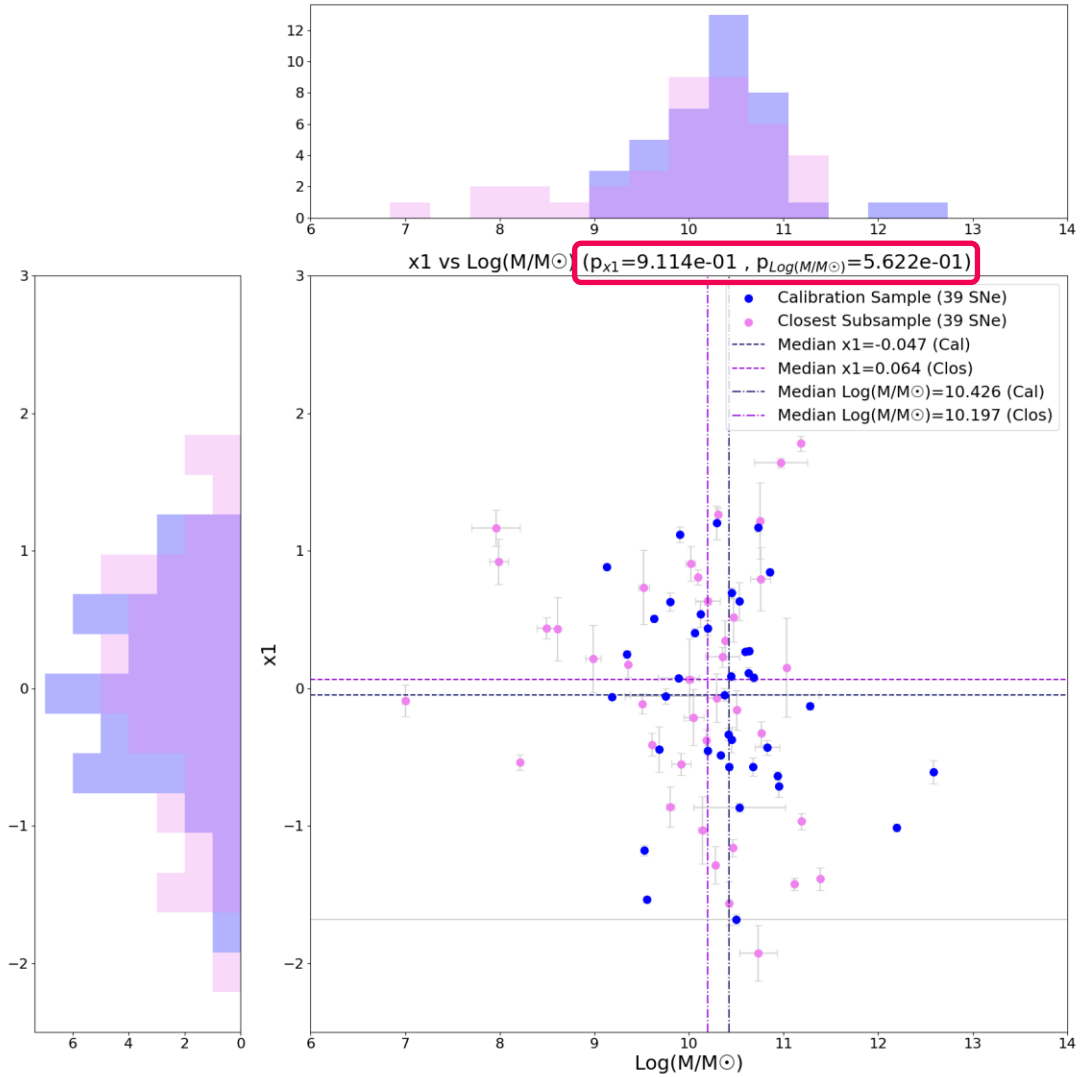


Fig. 1 and 2 - Left figure show x1 as a function of log(M/M⊙) , while right figure shows c as a function of log(sSFR) [yr^{-1}] for supernovae from both calibration (blue) and full Hubble Flow sample (red).

1 - First Results

$H_0 = 74.541^{+1.104}_{-1.171}$ km s^{-1} Mpc^{-1}



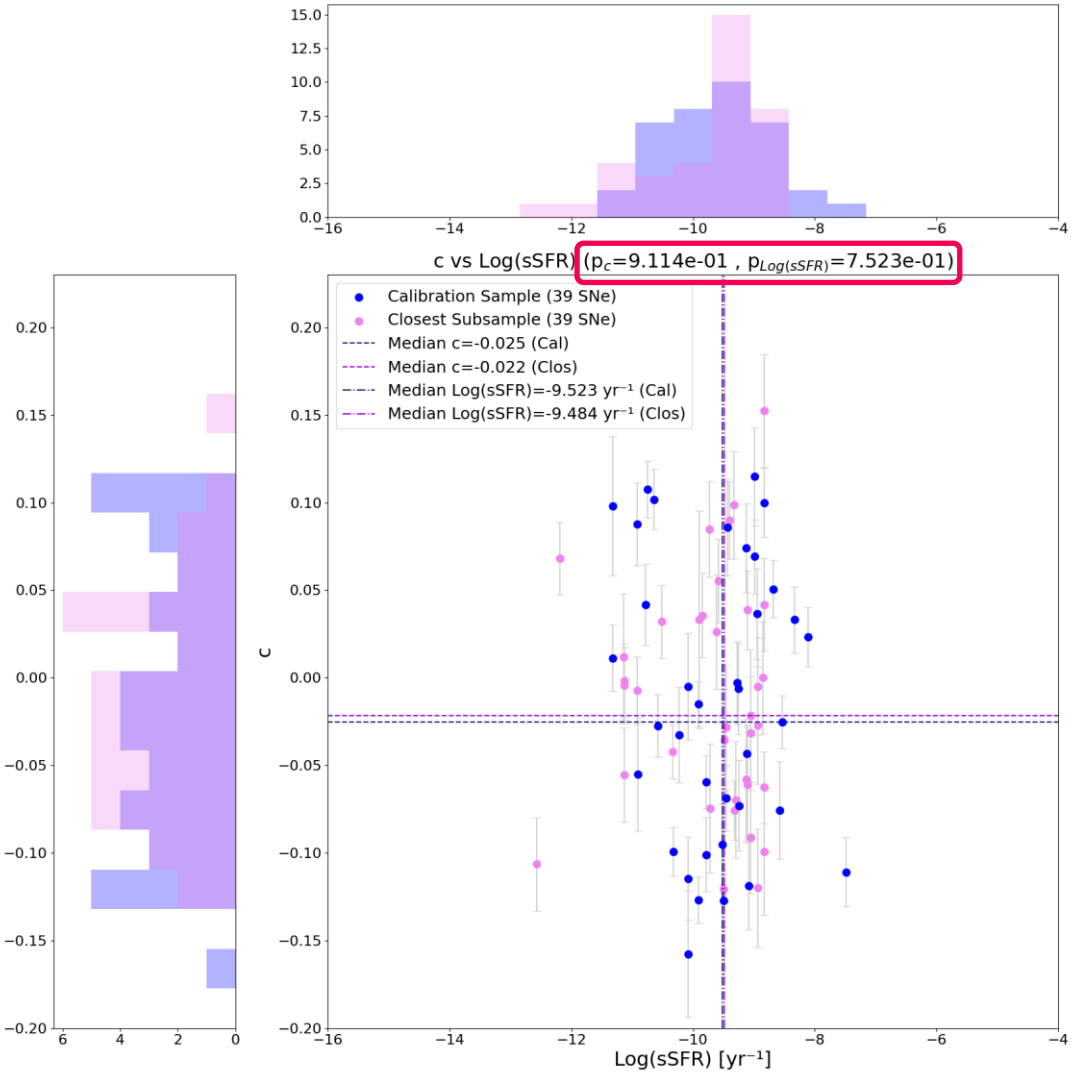


Fig. 3 and 4 - Left figure show x1 as a function of log(M/M⊙) , while right figure shows c as a function of log(sSFR) [yr^{-1}] for supernovae from both calibration (blue) and closest subsample (violet).

1 - First Results

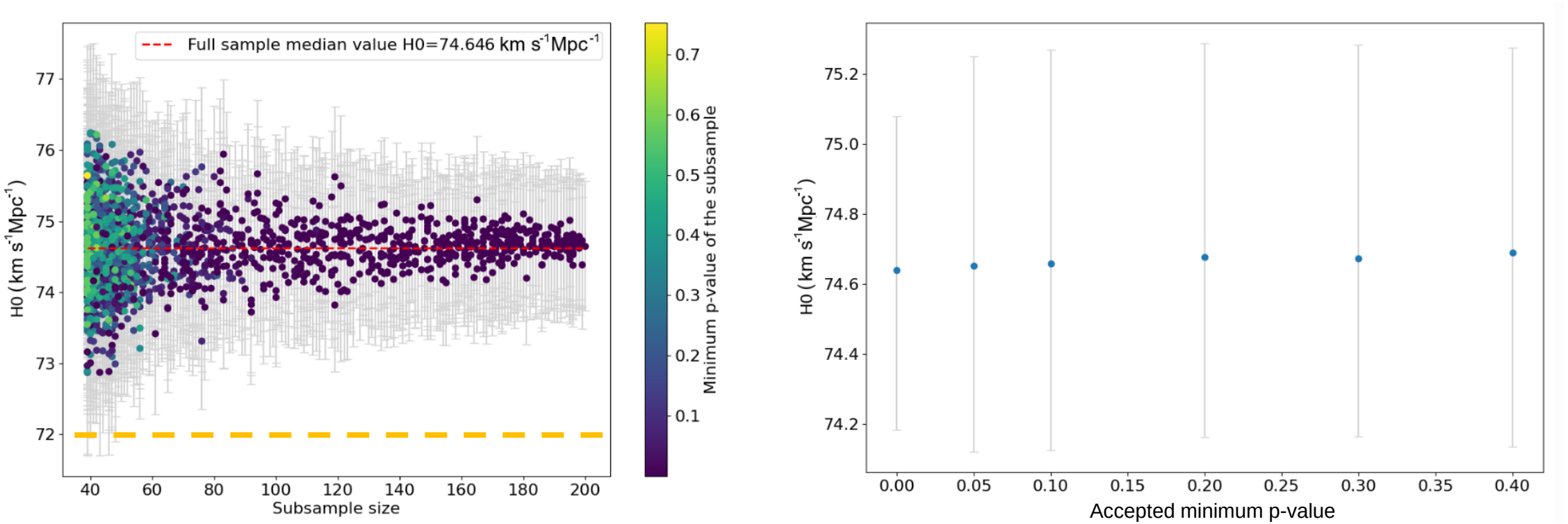


Fig. 5 and 6 - The left figure shows H_0 as a function of the generated subsample size, as well as the smallest p-value from all the c, x1, log(M/M$_\odot$) and log(sSFR) distributions represented by the color map. The right figure shows the median values obtained from H_0 distributions estimated for the subsamples whose p-values were higher than a certain value as a function of the minimum accepted p-value.

Values of H_0 consistently higher than 72 $\mathrm{km}\ s^{-1}Mpc^{-1}$!

2 – Conclusions and Further Work

- No noticeable relation between the better concordance of the different properties distributions of the SNe and their host galaxies and the estimated parameters, including H0.

- A subsample from the Hubble Flow sample capable of independently reducing the Hubble tension may not exist!

However....

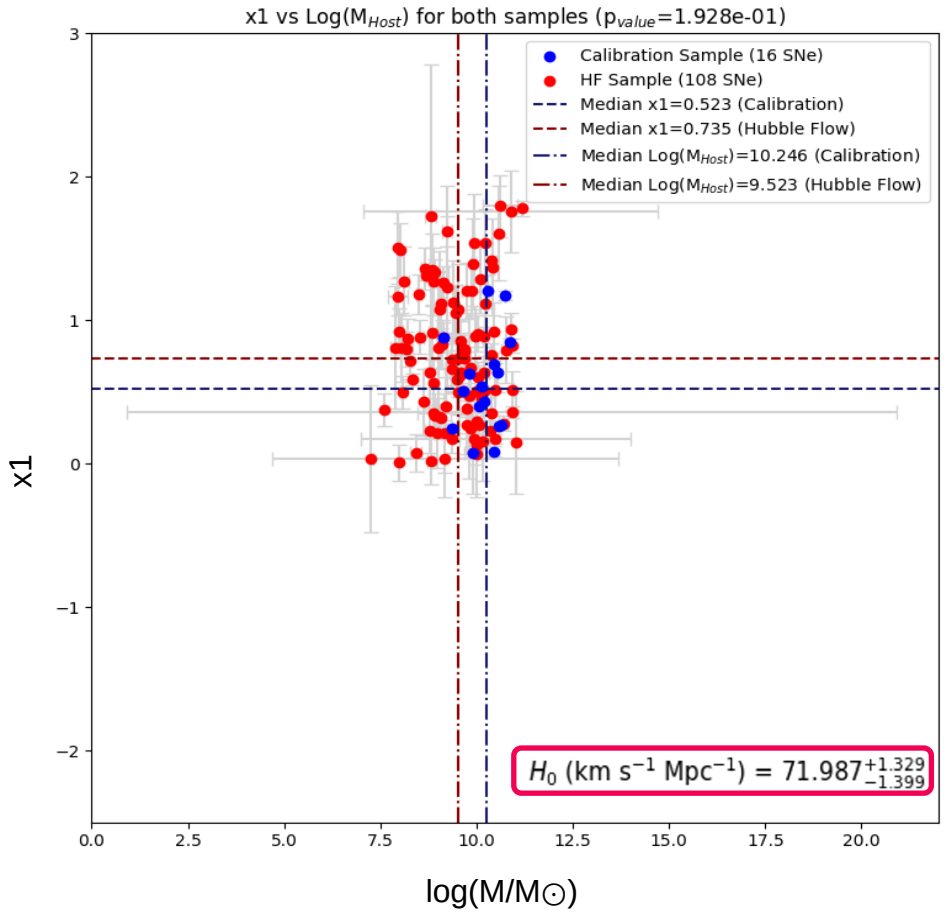


Fig 7- Parameter x1 as a function of log(M/M⊙) for SNe of the calibration and Hubble Flow sample with x1>0 and -11<Log(sSFR)<-8.5.

~ 3σ difference!

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"If you change the way you look at things, things you look at change"

Max Planck

Thank You!