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Analysing a forecast cosmological redshift drift

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We create a model independent mock dataset to test the viability and possible properties of the cosmological redshift drift, also known as Sandage-Loeb test. The redshift of a given object will exhibit a specific variation through time due to the expansion of the universe. This mechanism was predicted by Sandage in 1962, but with the technology of that epoch it was impossible to detect the signal. When new spectroscopic techniques were being used in astrophysics, the concept was revisited by Loeb in 1998.

We also create, in the same model independent way as the SL data, future mock datasets of SN and BAO to compare with SL, and also to see its performance when using all datasets. The behaviour of the datasets are analysed through testing several cosmological models with MCMC. SL dataset presents interesting features, as for example different correlations between parameters comparing to other mock datasets. Besides, the ability of the SL mock dataset to constrain the matter content of the universe Ω_m is also remarkable, being quite better than the other datasets.

Summary

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