CANDELS COSMOS Photo-z PDFs README

Kodra et al. (2022)

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Contents

This file contains details on the files containing the photo-z probability distributions (p(z) or PDF) from all participants and combination methods, for all objects from the COSMOS field. There is one PDF file per object for which redshift distributions have been estimated. The ID in the file name coincides with the CANDELS tfit ID used in the photometry catalog:

    hlsp_candels_hst_wfc3_cos-tot-multiband_f160w_v1-1photom_cat.txt

Column Description

# 1	z	Redshift values for the grid on which PDFs are tabulated
# 2	Finkelstein	Probability Density Function (PDF) from Finkelstein
# 3	Fontana	PDF from Fontana
# 4	Pforr	PDF from Pforr
# 5	Salvato	PDF from Salvato
# 6	Wiklind	PDF from Wiklind
# 7	Wuyts	PDF from Wuyts
# 8	HB4	PDF from Hierarchical Bayesian combination, constructed using the PDFs from the best-performing four groups
# 9	mFDa4	PDF from the minimum Fréchet Distance combination (computed with ℓ^1 distance metric), constructed using the PDFs from the best-performing four groups

Notes

- HB4: the probability distribution with the Hierarchical Bayesian combination method (see Section 4.1), which is evaluated using only 4 of the 6 participants (Finkelstein, Fontana, Salvato, Wuyts).

- mFDa4: the probability distribution evaluated using the minimum Frechet Distance absolute (mFDa) combination method for the given object (Section 4.2). It is chosen by using only 4 of the 6 participants (Finkelstein, Fontana, Salvato, Wuyts).

- If the PDF from a participant is missing for a given object, that participant is not included in (1) the calculation of the combination methods HB4 and mFDa4 and (2) not included in the calculation of the parameter alpha of the HB method (Equation 6). Therefore, we specify at the end of the header, the number of participants used in each file separately, as shown below:

  # Number of participants used to determine HB4: 4
  # HB4 alpha: 1.825
  # Number of participants used to determine mFDa4: 4

- Negative values (-1.0) are used whenever a given participant has not provided a probability distribution for an object.