



Publication Year	2021
Acceptance in OA	2022-03-29T09:12:25Z
Title	A nearby galaxy perspective on dust evolution. Scaling relations and constraints on the dust build-up in galaxies with the DustPedia and DGS samples
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Publisher's version (DOI)	10.1051/0004-6361/202039701
Handle	http://hdl.handle.net/20.500.12386/31987
Journal	ASTRONOMY & ASTROPHYSICS
Volume	649

These estimators are implemented in the Python astropy module (Astropy Collaboration 2013, 2018). We have designed our own skewness W-estimator:

$$\hat{\gamma}(X) = \frac{\sum_{|u_i|<1} u_i^3(1-u_i^2)^2}{\sum_{|u_i|<1} (1-u_i^2)^2}. \quad (\text{F.23})$$

We have also slightly improved astropy's implementation by iterating on Eqs. (F.20)–(F.23), replacing l_x , l_y , s_x , and s_y with $\hat{\mu}(X)$, $\hat{\mu}(Y)$, $\sqrt{\hat{V}(X)}$, and $\sqrt{\hat{V}(Y)}$, respectively, until a 10^{-5} relative accuracy is reached. The tuning parameter is usually taken as $c = 6$ for the mean and $c = 9$ for the variance, covariance, and skewness.

Appendix G: Dust evolution results assuming a Chabrier IMF

We have performed the modeling of Sect. 5.2.2, assuming a Chabrier (2003) IMF. The data have been corrected accordingly: M_\star has been multiplied by 0.61 and SFR by 0.63 (Madau & Dickinson 2014), as these two quantities were derived assuming a Salpeter (1955) IMF. Figure G.1 shows the fit of the scaling relations; it is the equivalent of Fig. 14. Figures G.2 and G.3 display the PDF of the dust evolution and SFH-related parameters, respectively; they are the equivalent of Figs. 16 and 17. The inferred timescales are displayed in Fig. G.4; it is the equivalent of Fig. 18.

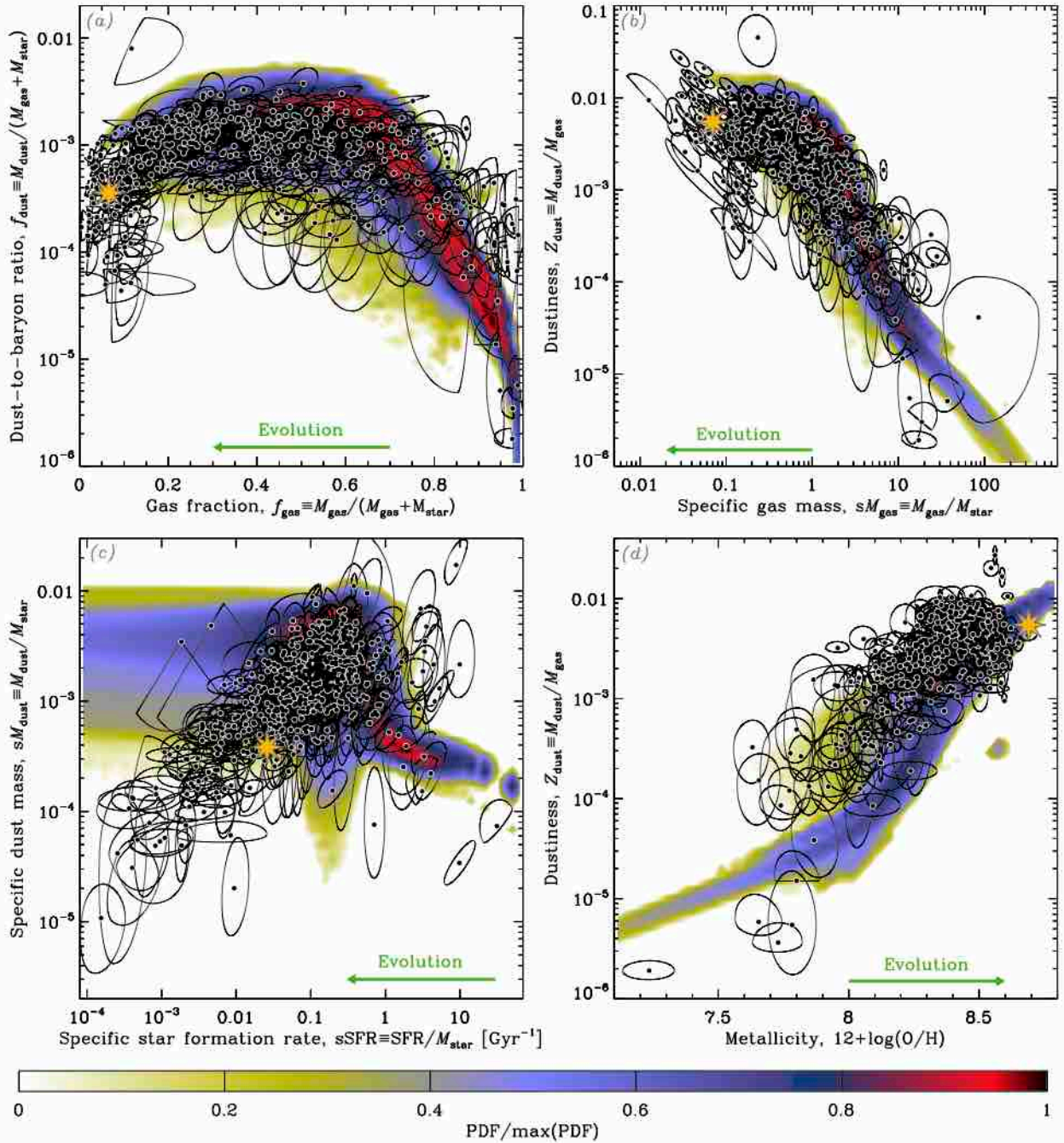


Fig. G.1. Fitted dust evolution tracks, assuming a Chabrier (2003) IMF. This is the equivalent of Fig. 14.