Table B1. Data explanations of the stellar population analysis output (based on PPXF software with FSPS stellar model; see Section 2.3 for details). The full catalogue of all the stellar population properties and SFH parameters used in this paper can be obtained from the website of MaNGA DynPop (https://manga-dynpop.github.io). The order of galaxies in this catalogue corresponds to their order in the JAM catalogue of Paper I.

Parameters	Dimensions	Units	Descriptions
			Part 1: General galaxy properties
plateIFU	(10 296,1)		The plate ID + IFU design ID (e.g. 7443–12 703; unique for each galaxy)
mangaid	(10 296,1)		Unique MaNGA ID (e.g. 1–114 145)
obj_ra	(10 296,1)	degree	Right ascension of the science object in J2000
obj_dec	(10 296,1)	degree	Declination of the science object in J2000
ebvgal	(10 296,1)		$E(B-V)$ value from SDSS dust routine for this IFU
z	(10 296,1)		Redshift of the galaxy
			Part 2: Global stellar population properties
SNR_Re	(10 296,1)		The *S/N* of the stacked spectrum within the elliptical half-light isophote, which is calculated as the ratio between the median values of flux and noise of the stacked spectra within the wavelength range from 4730 to 4780 Å
Mstar_Re	(10 296,1)	lg ($M_\odot$)	Stellar mass enclosed within the elliptical half-light isophote, derived using PPXF with a Salpeter (1955) IMF
Lr_int_Re	(10 296,1)	lg ($L_\odot$)	The *intrinsic* *r*-band luminosity within the elliptical half-light isophote, derived from the stacked intrinsic spectrum within the same aperture (see Section 2.3.2 for details)
Lr_obs_Re	(10 296,1)	lg ($L_\odot$)	The *observed* *r*-band luminosity within the elliptical half-light isophote, derived from the stacked observed spectrum within the same aperture (see Section 2.3.2 for details)
LW_Age_Re	(10 296,1)	lg (yr)	Global *r*-band luminosity-weighted age, calculated by performing PPXF fitting on the stacked spectrum within elliptical half-light isophote
LW_Metal_Re	(10 296,1)		Global *r*-band luminosity-weighted [*Z/H*]
MW_Age_Re	(10 296,1)	lg (yr)	Global mass-weighted age
MW_Metal_Re	(10 296,1)		Global mass-weighted [*Z/H*]
ML_int_Re	(10 296,1)	lg ($M_\odot/L_\odot$)	Averaged *intrinsic* stellar mass-to-light ratio within the elliptical half-light isophote (calculated as the stellar mass enclosed within the elliptical half-light isophote and the *r*-band luminosity derived from the intrinsic spectrum within the same aperture; see Section 2.3.2 and Fig. 2 for definition of the intrinsic spectrum)
ML_obs_Re	(10 296,1)	lg ($M_\odot/L_\odot$)	Averaged *observed* stellar mass-to-light ratio within the elliptical half-light isophote (calculated as the stellar mass enclosed within the elliptical half-light isophote and the *r*-band luminosity derived from the observed spectrum within the same aperture)
Av_Re	(10 296,1)		Best-fitting dust attenuation at $\lambda = 5500$ Å (*V* band; see Cappellari 2023, section 3.7 for details)
delta_Re	(10 296,1)		Best-fitting UV slope of the spectrum (see Cappellari 2023, section 3.7 for details)
Fred_tot_Re	(10 296,1)		*r*-band luminosity ratio between the observed spectrum and the intrinsic spectrum
Fred_gal_Re	(10 296,1)		*r*-band luminosity ratio between the observed spectrum (with the MW dust attenuation corrected) and the intrinsic spectrum
			Part 3: Stellar population gradients
LW_Age_Slope	(10 296,1)	dex/R_e	Gradient of *r*-band luminosity-weighted age within the elliptical half-light isophote (see Section 4 and Fig. 10 for details)
LW_Metal_Slope	(10 296,1)	dex/R_e	Gradient of *r*-band luminosity-weighted [*Z/H*] within the elliptical half-light isophote
MW_Age_Slope	(10 296,1)	dex/R_e	Gradient of mass-weighted age within the elliptical half-light isophote
MW_Metal_Slope	(10 296,1)	dex/R_e	Gradient of mass-weighted [*Z/H*] within the elliptical half-light isophote
ML_int_Slope	(10 296,1)	dex/R_e	Gradient of *intrinsic* *r*-band stellar mass-to-light ratio within the elliptical half-light isophote
ML_obs_Slope	(10 296,1)	dex/R_e	Gradient of *observed* *r*-band stellar mass-to-light ratio within the elliptical half-light isophote
			Part 4: Stellar population radial profiles
LW_Age_Profile	(10 296,8)	lg (yr)	Radial profile of *r*-band luminosity-weighted age from 0 to $2R_e$ with the radial step being $0.25R_e$ (i.e. eight radial bins for each galaxy; see Section 4 and Fig. 10 for details)
LW_Metal_Profile	(10 296,8)		Radial profile of *r*-band luminosity-weighted [*Z/H*]
MW_Age_Profile	(10 296,8)	lg (yr)	Radial profile of mass-weighted age
MW_Metal_Profile	(10 296,8)		Radial profile of mass-weighted [*Z/H*]
ML_int_Profile	(10 296,8)	lg ($M_\odot/L_\odot$)	Radial profile of *intrinsic* *r*-band stellar mass-to-light ratio
ML_obs_Profile	(10 296,8)	lg ($M_\odot/L_\odot$)	Radial profile of *observed* *r*-band stellar mass-to-light ratio
			Part 5: Stellar population maps
BinID_Map	(10 296, N^a, N)		IDs of Voronoi bins that the spaxels are associated with. Spaxels that have the same ID belong to the same Voronoi bin (set as −1 if a spaxel does not belong to any bins) and share the same stellar population properties (i.e. luminosity-/mass-weighted age and metallicity, and stellar mass-to-light ratio)
inRe_Map	(10 296, N, N)		1 for spaxels within the elliptical half-light isophote and 0 for those outside the elliptical half-light isophote
Mstar_Map	(10 296, N, N)	lg ($M_\odot$)	Stellar mass maps[b], derived using PPXF with a Salpeter (1955) IMF
Lr_int_Map	(10 296, N, N)	lg ($L_\odot$)	The *intrinsic* SDSS *r*-band luminosity maps[c]
Lr_obs_Map	(10 296, N, N)	lg ($L_\odot$)	The *observed* SDSS *r*-band luminosity maps[d]

Table B1 – *continued*

Parameters	Dimensions	Units	Descriptions
LW_Age_Map	(10 296, *N*, *N*)	lg (yr)	Spatially resolved *r*-band luminosity-weighted age maps[e]
LW_Metal_Map	(10 296, *N*, *N*)		Spatially resolved *r*-band luminosity-weighted [*Z*/*H*] maps
MW_Age_Map	(10 296, *N*, *N*)	lg (yr)	Spatially resolved stellar mass-weighted age maps
MW_Metal_Map	(10 296, *N*, *N*)		Spatially resolved stellar mass-weighted [*Z*/*H*] maps
ML_int_Map	(10 296, *N*, *N*)	lg ($M_\odot/L_\odot$)	Spatially resolved *intrinsic* *r*-band stellar mass-to-light ratio maps
ML_obs_Map	(10 296, *N*, *N*)	lg ($M_\odot/L_\odot$)	Spatially resolved *observed* *r*-band stellar mass-to-light ratio maps
Av_Map	(10 296, *N*, *N*)		Maps of best-fitting dust attenuation at $\lambda = 5500$ Å (*V* band; see Cappellari 2023, section 3.7 for details)
delta_Map	(10 296, *N*, *N*)		Maps of best-fitting UV slope of the spectrum (see Cappellari 2023, section 3.7 for details)
Fred_tot_Map	(10 296, *N*, *N*)		Maps of *r*-band luminosity ratio between the observed spectrum and the intrinsic spectrum
Fred_gal_Map	(10 296, *N*, *N*)		Maps of *r*-band luminosity ratio between the observed spectrum (with the MW dust attenuation corrected) and the intrinsic spectrum
			Part 6: Star-formation history
T50	(10 296,1)	Gyr	The lookback time when galaxies reach 50 per cent of their present-day stellar mass
T90	(10 296,1)	Gyr	The lookback time when galaxies reach 90 per cent of their present-day stellar mass
SFR_History	(10 296,15)	lg ($M_\odot$ yr^{-1})	SFR at different lookback time grids (from 0 to 14 Gyr, with a linear time step being 1 Gyr; see Section 5 for details)
sSFR_History	(10 296,15)	lg (Gyr^{-1})	SSFR at different lookback time grids (from 0 to 14 Gyr, with a linear time step being 1 Gyr; see Section 5 for details)
Mass_Growth_CDF	(10 296,15)		Cumulative distribution function of stellar mass growth

Notes.
[a]*N* is the spaxel number along *X*- or *Y*-axis of this map.
[b]For a given Voronoi bin which consists of *N* spaxels, the stellar mass of each spaxel is the same, given by $M_{*,\rm spx} = M_{*,\rm bin}/N$, where $M_{*,\rm bin}$ is the associated stellar mass of this Voronoi bin.
[c]For a given Voronoi bin which consists of *N* spaxels, the intrinsic *r*-band luminosity of each spaxel is the same, given by $L^{\rm int}_{r,\rm spx} = L^{\rm int}_{r,\rm bin}/N$, where $L^{\rm int}_{r,\rm bin}$ is the intrinsic *r*-band luminosity of this Voronoi bin, derived from the best-fitting intrinsic spectrum of this bin (see Section 2.3.2 for details).
[d]Same as intrinsic luminosity maps, but for observed *r*-band luminosity.
[e]For a given Voronoi bin, the spaxels in this bin have the same age (and also metallicity, both luminosity- or mass-weighted), fitted from the binned spectrum.

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