Mbh-n paper

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ABSTRACT

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Subject headings: keywords

1. Introduction

2. Results

Table 1: Linear regression analysis of the $L_{\rm sph} - n_{\rm sph}$ diagram.

Subsample (size)	**Regression**	$\boldsymbol{\alpha}$	$\boldsymbol{\beta}$	$\langle \log n_{\rm sph} \rangle$	$\boldsymbol{\epsilon}$	$\boldsymbol{\Delta}$
	$\log[M_{\rm BH}/{\rm M}_\odot] = \alpha + \beta[(MAG_{\rm sph} - \langle MAG_{\rm sph}\rangle)/{\rm mag}]$					
All (62)	BCES $(Y\|X)$	-23.88 ± 0.15	-7.17 ± 0.80	0.51	–	1.18
	mFITEXY $(Y\|X)$	-23.95 ± 0.13	-6.70 ± 0.45	0.51	$0.56^{+0.15}_{-0.10}$	0.98
	`linmix_err` $(Y\|X)$	-23.92 ± 0.15	-6.40 ± 0.57	0.51	0.74 ± 0.13	1.07
	BCES $(X\|Y)$	-23.88 ± 0.14	-6.70 ± 0.51	0.51	–	1.11
	mFITEXY $(X\|Y)$	-23.94 ± 0.14	-7.50 ± 0.52	0.51	$0.59^{+0.17}_{-0.11}$	1.23
	`linmix_err` $(X\|Y)$	-23.94 ± 0.16	-7.51 ± 0.62	0.51	0.81 ± 0.16	1.23
	BCES Bisector	-23.88 ± 0.14	-6.93 ± 0.60	0.51	–	1.14
	mFITEXY Bisector	-23.94 ± 0.13	-7.08 ± 0.34	0.51	–	1.16
	`linmix_err` Bisector	-23.93 ± 0.16	-6.91 ± 0.42	0.51	–	1.14
Elliptical (30)	BCES $(Y\|X)$	-25.46 ± 1.12	38.47 ± 114.45	0.76	–	6.37
	mFITEXY $(Y\|X)$	-25.74 ± 0.18	-9.74 ± 1.59	0.76	$0.24^{+0.32}_{-0.24}$	0.94
	`linmix_err` $(Y\|X)$	-25.65 ± 0.21	-7.87 ± 2.15	0.76	0.61 ± 0.22	1.06
	BCES $(X\|Y)$	-25.46 ± 0.23	-10.73 ± 3.21	0.76	–	1.29
	mFITEXY $(X\|Y)$	-25.74 ± 0.20	-10.42 ± 1.79	0.76	$0.22^{+0.38}_{-0.22}$	1.29
	`linmix_err` $(X\|Y)$	-25.72 ± 0.28	-10.92 ± 2.70	0.76	0.73 ± 0.34	1.33
	BCES Bisector	-25.46 ± 0.20	0.03 ± 0.05	0.76	–	1.14
	mFITEXY Bisector	-25.74 ± 0.19	-10.07 ± 1.19	0.76	–	1.26
	`linmix_err` Bisector	-25.68 ± 0.25	-9.15 ± 1.74	0.76	–	1.16
Lenticular (11)	BCES $(Y\|X)$	-22.08 ± 1.66	33.52 ± 98.87	0.33	–	6.09
	mFITEXY $(Y\|X)$	-22.11 ± 0.24	-6.31 ± 2.45	0.33	$0.42^{+0.28}_{-0.17}$	0.71
	`linmix_err` $(Y\|X)$			0.33		
	BCES $(X\|Y)$	-22.08 ± 0.19	-6.83 ± 1.16	0.33	–	0.71
	mFITEXY $(X\|Y)$	-21.94 ± 0.44	-13.16 ± 7.91	0.33	$0.61^{+0.60}_{-0.56}$	1.39
	`linmix_err` $(X\|Y)$			0.33		
	BCES Bisector	-22.08 ± 0.30	0.06 ± 0.05	0.33	–	1.09
	mFITEXY Bisector	-22.05 ± 0.35	-8.55 ± 2.79	0.33	–	0.84
	`linmix_err` Bisector			0.33	–	
Spiral (17)	BCES $(Y\|X)$	-22.33 ± 0.26	-5.31 ± 5.83	0.18	–	1.15
	mFITEXY $(Y\|X)$	-22.22 ± 0.19	-2.17 ± 0.98	0.18	$0.53^{+0.24}_{-0.13}$	0.72
	`linmix_err` $(Y\|X)$	-22.26 ± 0.24	-1.53 ± 1.88	0.18	0.71 ± 0.22	0.78
	BCES $(X\|Y)$	-22.33 ± 0.26	-5.19 ± 3.77	0.18	–	1.13
	mFITEXY $(X\|Y)$	-22.28 ± 0.44	-9.08 ± 5.31	0.51	$1.12^{+0.54}_{-0.31}$	1.83
	`linmix_err` $(X\|Y)$	-22.24 ± 0.71	-11.12 ± 13.59	0.18	1.95 ± 2.47	2.24
	BCES Bisector	-22.33 ± 0.26	-5.25 ± 3.38	0.18	–	1.14
	mFITEXY Bisector	-22.23 ± 0.33	-3.60 ± 1.29	0.18	–	0.92
	`linmix_err` Bisector	-22.25 ± 0.53	-2.88 ± 2.66	0.18	–	0.84

Table 2: Linear regression analysis of the $L_{\rm sph} - n_{\rm sph}$ diagram.

Subsample (size)	**Regression**	$\boldsymbol{\alpha}$	$\boldsymbol{\beta}$	$\langle \log n_{\rm sph} \rangle$	$\boldsymbol{\epsilon}$	$\boldsymbol{\Delta}$
Early-type (43)	BCES $(Y\|X)$	-24.55 ± 0.22	-11.84 ± 2.29	0.64	–	1.50
	mFITEXY $(Y\|X)$	-24.74 ± 0.14	-8.86 ± 0.66	0.51	$0.27^{+0.20}_{-0.27}$	0.87
	`linmix_err` $(Y\|X)$	-24.70 ± 0.17	-8.28 ± 0.87	0.64	0.58 ± 0.17	0.98
	BCES $(X\|Y)$	-24.55 ± 0.14	-8.25 ± 0.63	0.64	–	0.96
	mFITEXY $(X\|Y)$	-24.74 ± 0.14	-9.13 ± 0.68	0.64	$0.23^{+0.25}_{-0.23}$	1.08
	`linmix_err` $(X\|Y)$	-24.73 ± 0.18	-9.08 ± 0.87	0.64	0.60 ± 0.21	1.07
	BCES Bisector	-24.55 ± 0.17	-9.73 ± 1.05	0.64	–	1.14
	mFITEXY Bisector	-24.74 ± 0.14	-8.99 ± 0.48	0.64	–	1.06
	`linmix_err` Bisector	-24.72 ± 0.17	-8.66 ± 0.63	0.64	–	1.02
Bulges (30)	BCES $(Y\|X)$	-22.25 ± 0.20	-5.88 ± 3.06	0.26	–	1.16
	mFITEXY $(Y\|X)$	-22.19 ± 0.14	-2.99 ± 0.73	0.26	$0.52^{+0.18}_{-0.10}$	0.75
	`linmix_err` $(Y\|X)$	-22.20 ± 0.17	-2.48 ± 1.21	0.26	0.67 ± 0.15	0.83
	BCES $(X\|Y)$	-22.25 ± 0.20	-5.85 ± 1.83	0.26	–	1.15
	mFITEXY $(X\|Y)$	-22.17 ± 0.25	-7.65 ± 2.43	0.26	$0.87^{+0.30}_{-0.18}$	1.46
	`linmix_err` $(X\|Y)$	-22.16 ± 0.31	-7.80 ± 3.89	0.26	1.18 ± 0.65	1.48
	BCES Bisector	-22.25 ± 0.20	-5.87 ± 2.06	0.26	–	1.16
	mFITEXY Bisector	-22.18 ± 0.20	-4.34 ± 0.84	0.26	–	0.96
	`linmix_err` Bisector	-22.19 ± 0.25	-3.83 ± 1.39	0.26	–	0.91

NOTE.—For each subsample, we indicate $\langle MAG_{\rm sph} \rangle$, its average value of spheroid magnitudes. In the last two columns, we report ϵ, the intrinsic scatter, and Δ, the total rms scatter in the $\log(M_{\rm BH})$ direction. Both the early- and late-type subsamples do not contain the two galaxies classified as S0/Sp and the two galaxies classified as mergers (45+17=66-2-2).