Mbh-n paper

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ABSTRACT

blah blah

Subject headings: keywords

1. Introduction

2. Errors

How do we compute the errors on the measured Sérsic indices? Montecarlo, bootstrapping or any other evil statistical method do not take into account the systematics, which mainly depend on the decomposition model, i.e. the choice of the model components. But we are lucky, since there are many other decompositions in the literature for our galaxies. Graham & Driver (2007); Laurikainen et al. (2010); Sani et al. (2011); Vika et al. (2012); Beifiori et al. (2012); Rusli et al. (2013); Läsker et al. (2014) have done this job. So how about we do something similar to our first paper? Let's say that I am not better than anybody else at decomposing galaxies (this is obviously absurd, given my incredible competence in vivisecting galaxies, but let's assume it for now). I repeat the same game we did in our first paper. For each galaxy, I take all the available measurements from the literature, including my own measurement, and I compute the standard deviation of each set of measurements. The standard deviation becomes the error of my own measurement. When my measurement is the only available (nobody other than me ever decomposed that galaxy), the errors is set to be equal to the median value of the distribution in Figure 1 (almost the same we did in our first paper, see footnote 4). Figure 1: here only galaxies with more than one measurement are contributing. Take a galaxy, take its set of measurements (more than one!) of the Sérsic index, compute the standard deviation of that set, the standard deviation becomes the error on my own measurement (BTW, I am using the n derived from the equivalent axis fit). The distribution of the standard deviations is represented by the histogram. The median value is 0.13, which means a median uncertainty of 33% on each individual measurement. If we take of each set of measurements the average, then the error associated to the average and then the median value of all these errors, basically we are doing the same we did in footnote 4 of our first paper, and the cool thing is that now we get the same number we got then (20%).

3. Results

Figure 2: Well, we now have the errors on each of OUR measurements of n. We can plot bh mass vs n (in log).

Figure 3: Almost the same we did in our first paper. We take for each galaxy its set of measurements of n, we reject measurements in disagreement for more than 50%, we compute the median (not the average! this is different from what we did in the past, what do you think?) and the error associated to the mean, then we plot the black hole masses vs the median of log(n). The correlation looks a bit steeper than in Figure 2, with less scatter. I bet you say it looks curved.

PS I will soon step back from the division bulges/ellipticals, I seriously believe there is no such division. I will explain this soon. ;)

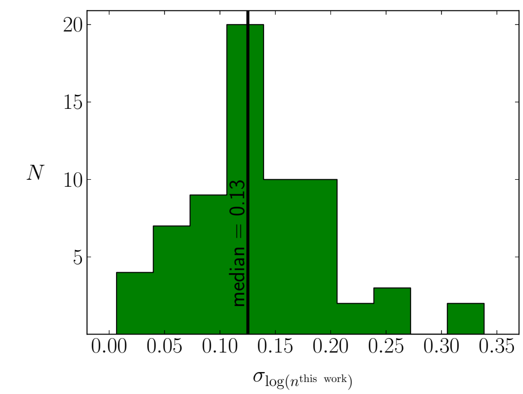

Fig. 1.—

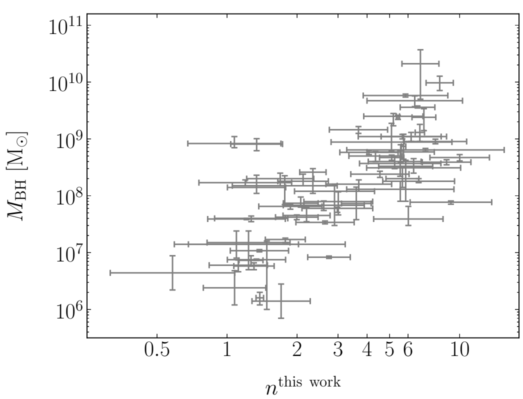

Fig. 2.—

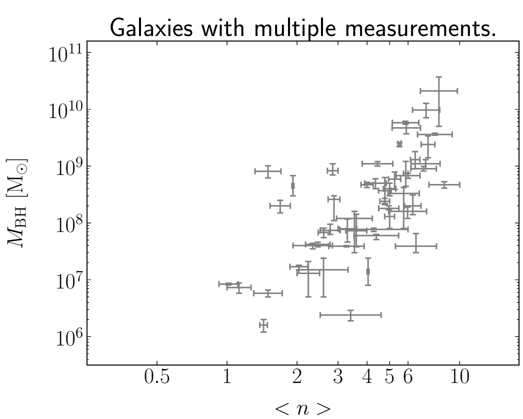

Fig. 3.—

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