Ay190 – Worksheet 05
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1 Curve Fitting: $M_{BH} - \sigma_*$ Relation

1.1 Plot Just Dots

Using `Astropy` to to read the file and store it in `Numpy` arrays. Plot the data.

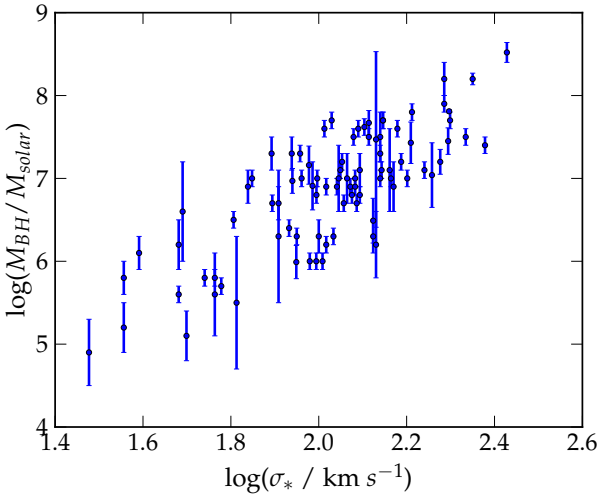

Figure 1: Plotting just the data, without any curve fitting

1.2 Linear Regression Ignoring Errors

Perform the linear regression on the data, ignoring any errors. Our result is a line with slope of 2.92542900883, while Greene & Ho (2006) finds the slope to be approximately 4. Thus, our prediction is a little bit shallower.

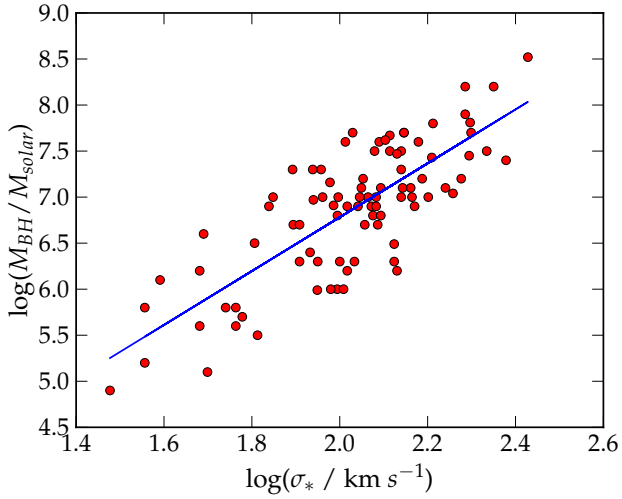

Figure 2: Perform a linear regression on the data, ignoring any errors.

1.3 Linear Regression With Errors

Perform the linear regression on the data, with the error on the y-axis and the extra error from the error on the x-axis. We can see that our new line has higher slope of 3.04682217993

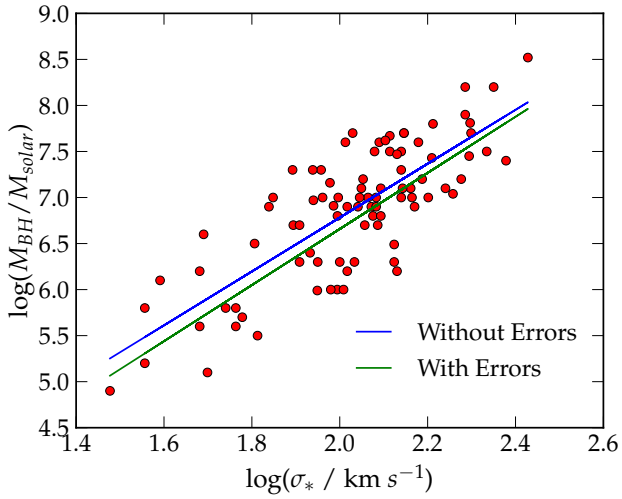

Figure 3: Perform a linear regression on the data, with errors