

# PHSX 444: Lab 04; Paul Trap for Charged Particles

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## 1 Introduction

## 2 Experimental Methods

### 2.1 Calibration

### 2.2 Flawed Method

### 2.3 Quality Data Collection

## 3 Results and Analysis

### 3.1 Flawed Data Analysis

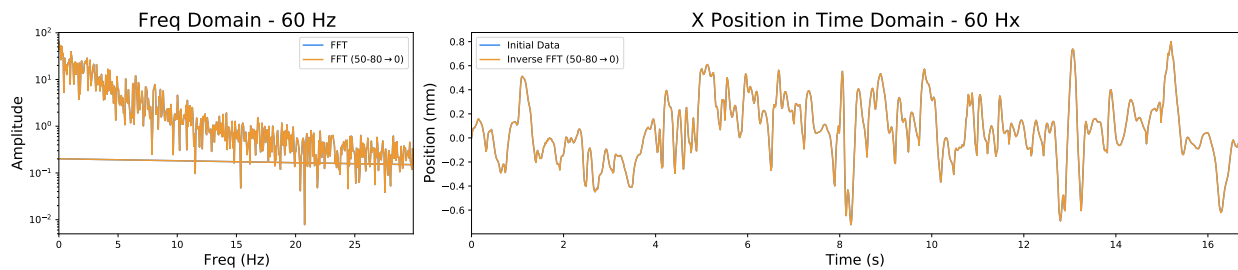


Figure 1

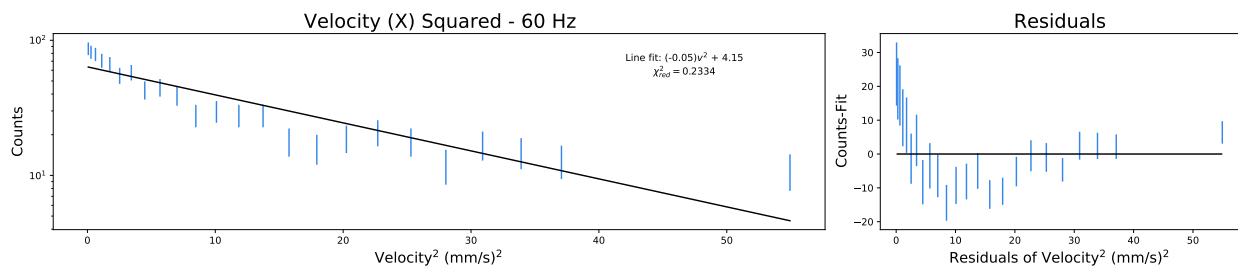


Figure 2

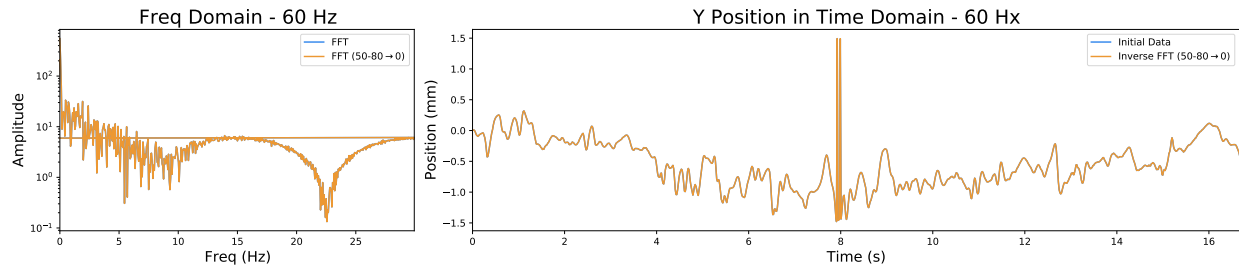


Figure 3

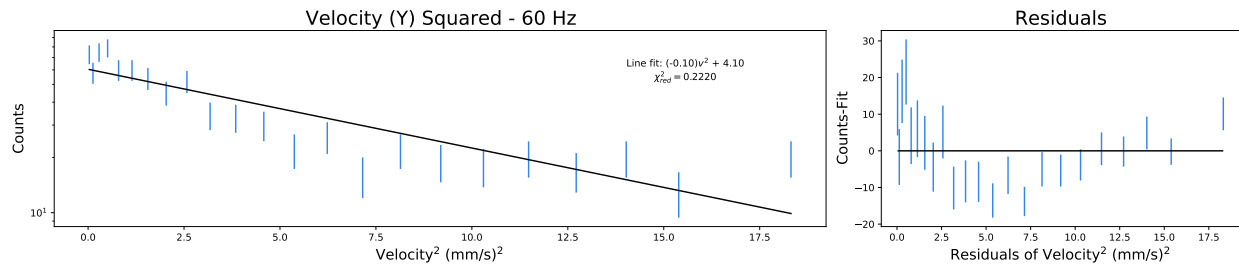


Figure 4

### 3.2 Analyzing Motion

### 3.3 Transient Response

### 3.4 Analyzing Velocity

### 3.5 Calculating Mass

### 3.6 Coulomb Crystal

## 4 Discussion and Conclusions

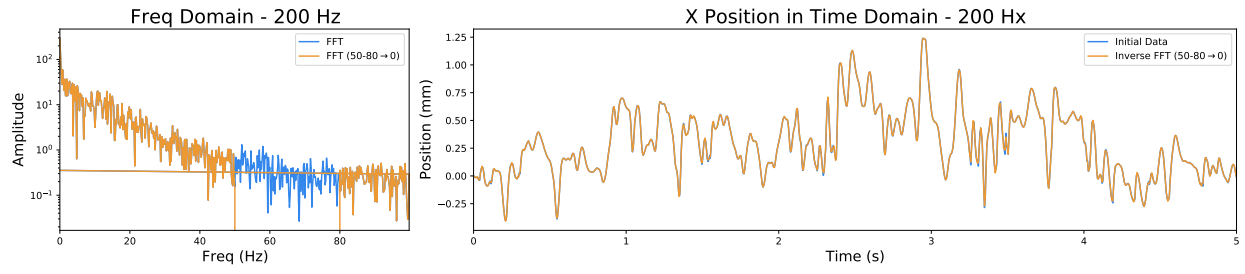


Figure 5

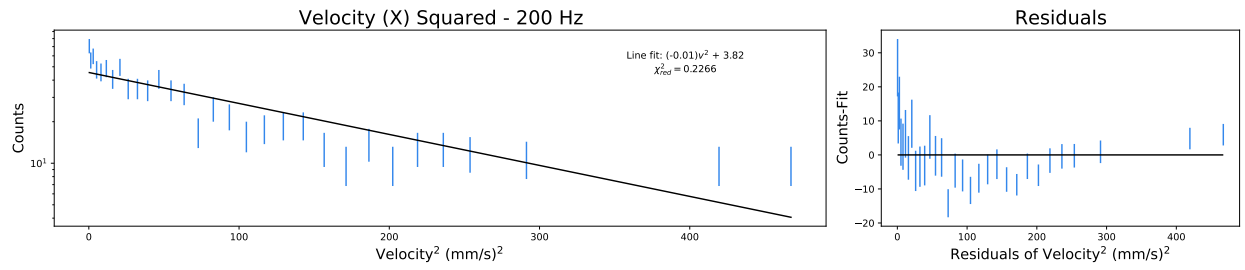


Figure 6

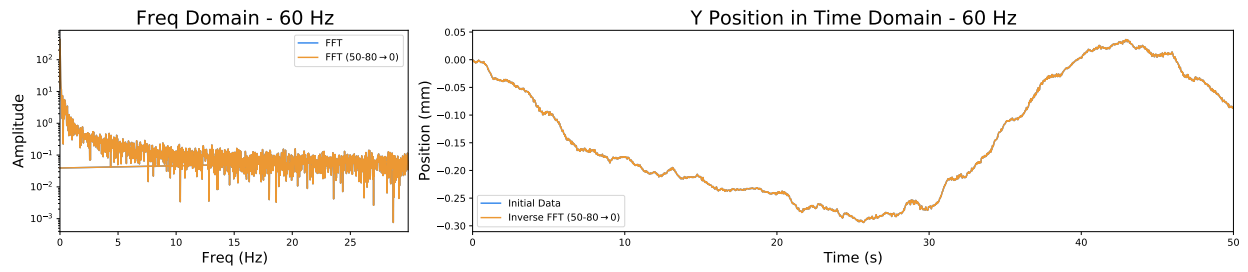


Figure 7

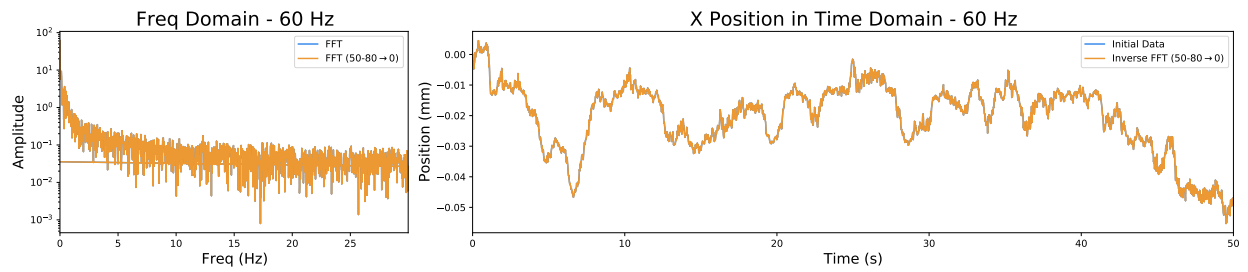


Figure 8

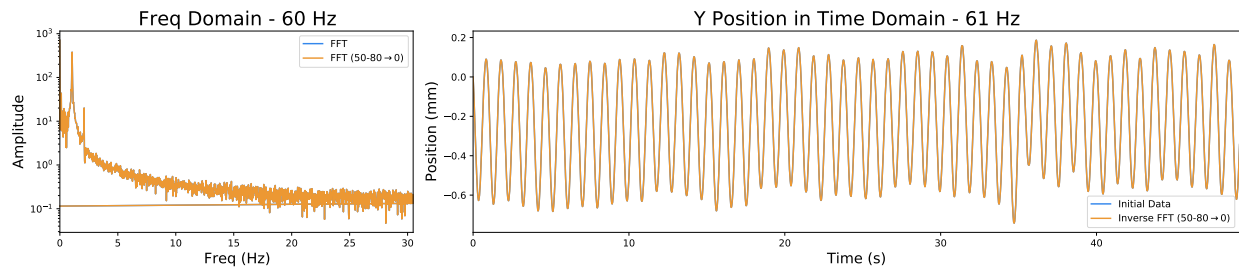


Figure 9

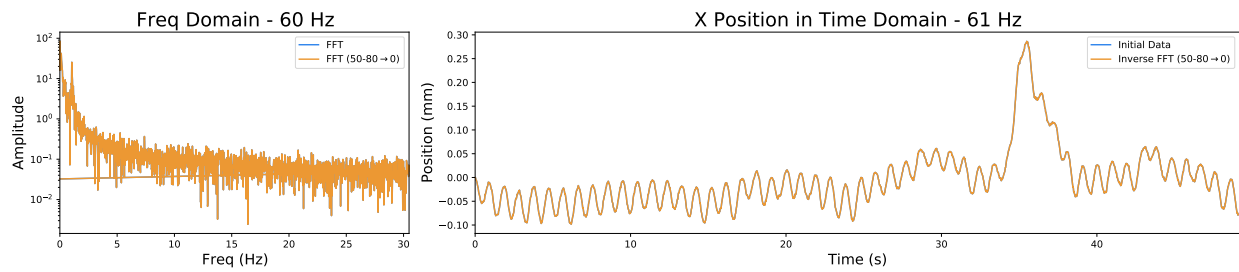


Figure 10

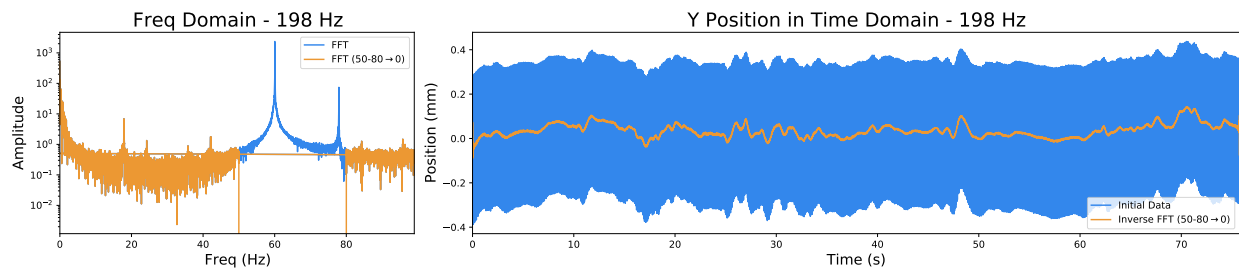


Figure 11

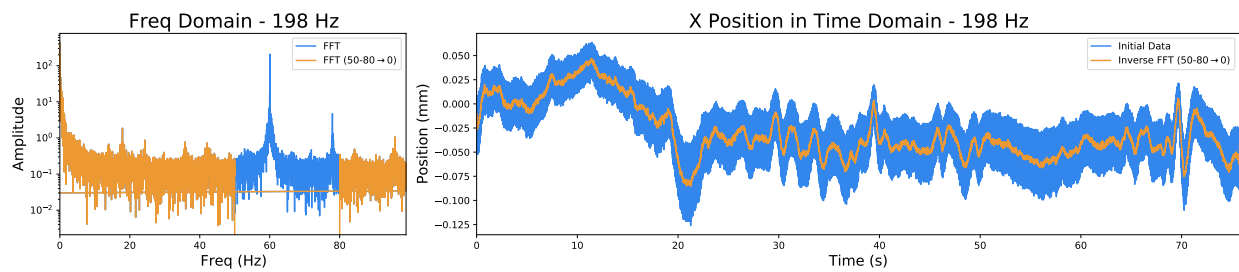


Figure 12

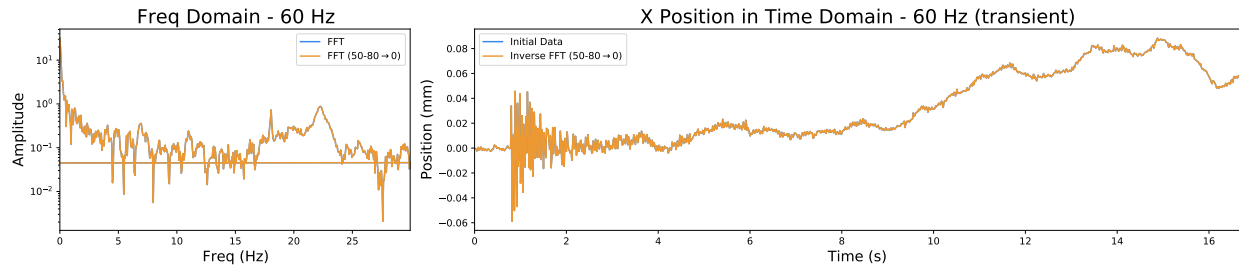


Figure 13

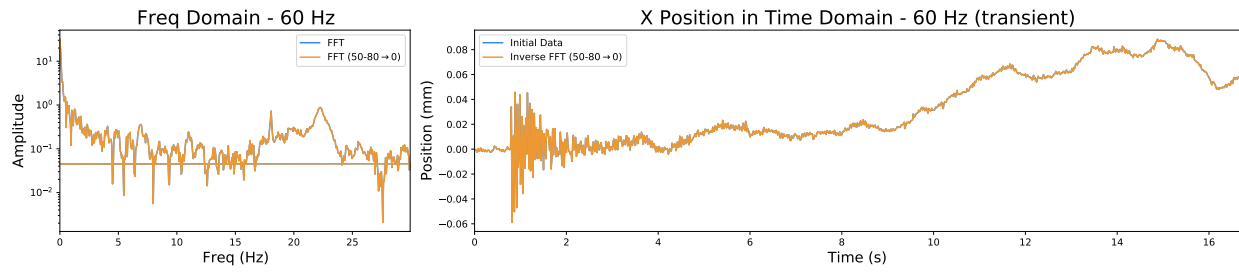


Figure 14

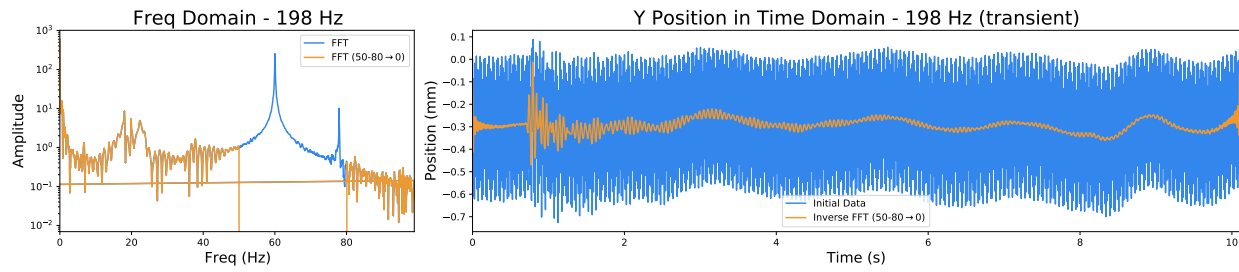


Figure 15

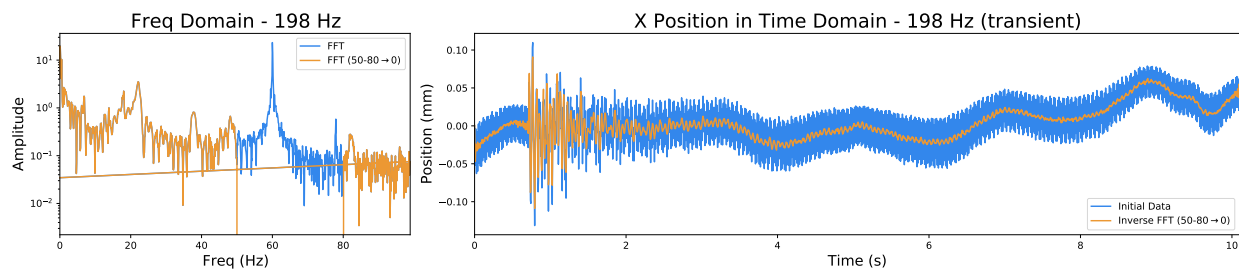


Figure 16

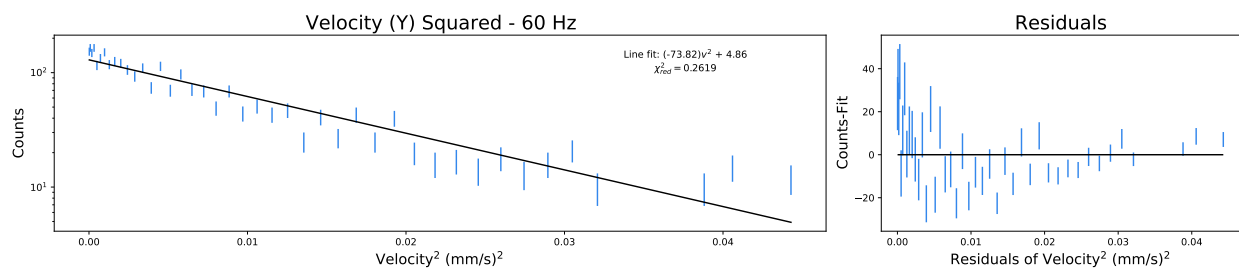


Figure 17

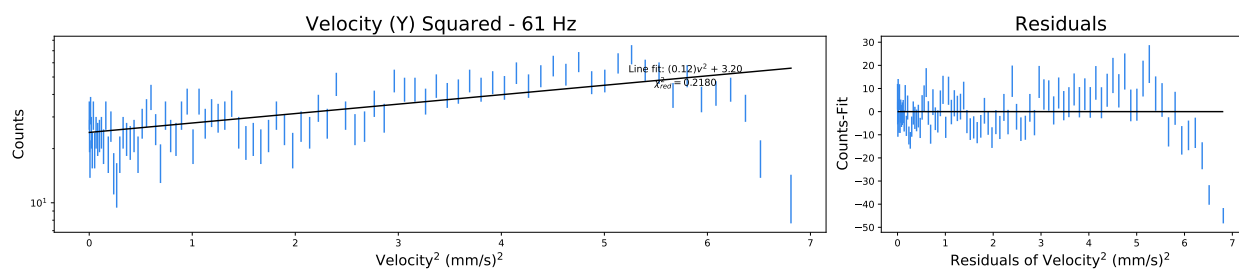


Figure 18

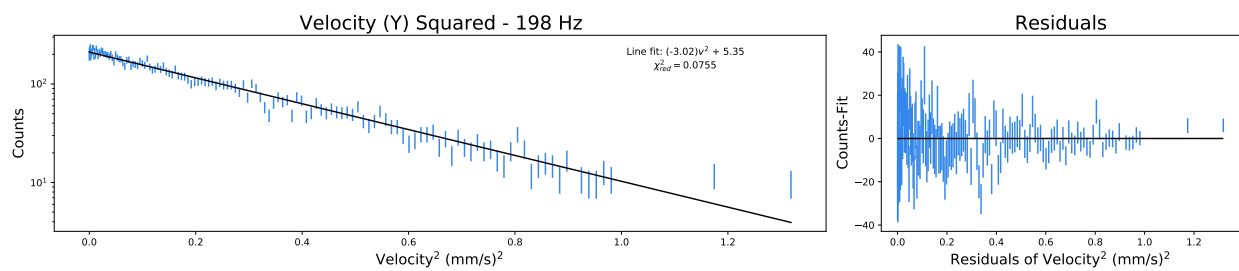


Figure 19

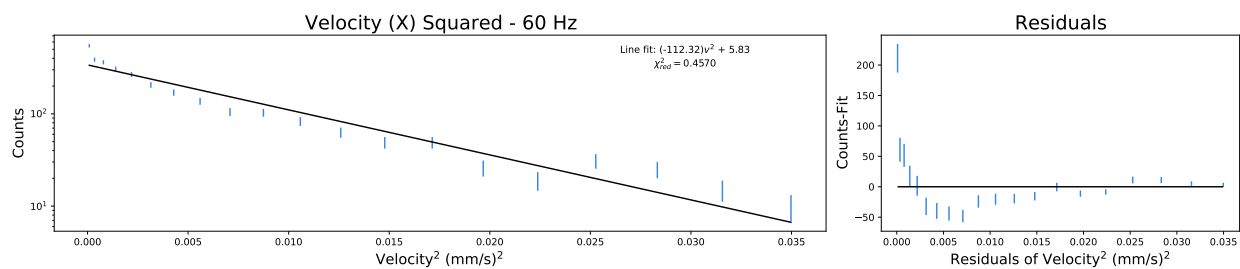


Figure 20

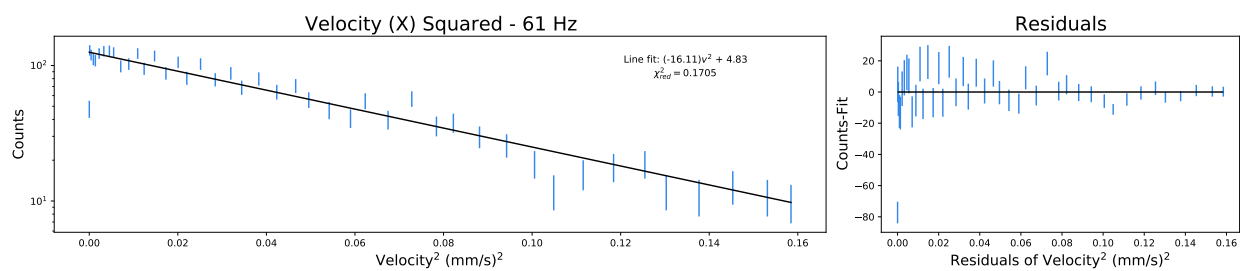


Figure 21

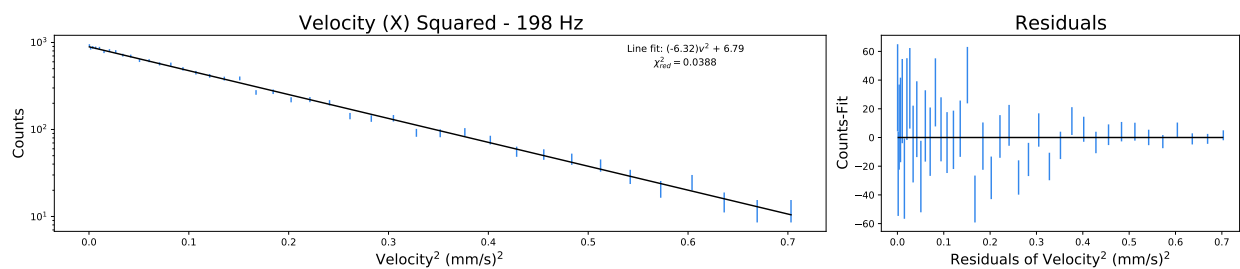


Figure 22

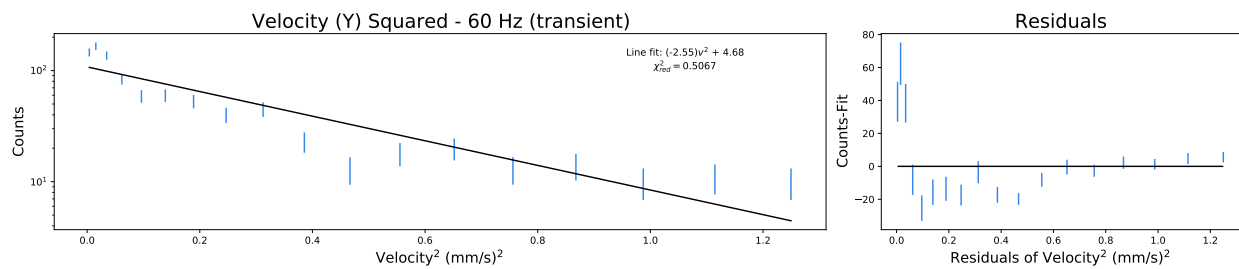


Figure 23

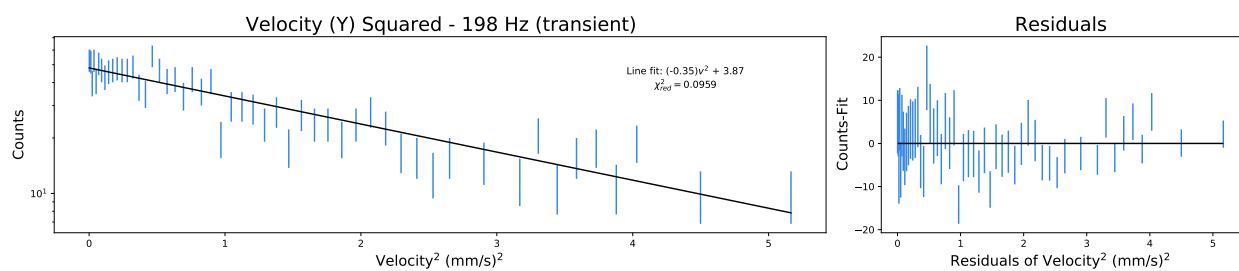


Figure 24

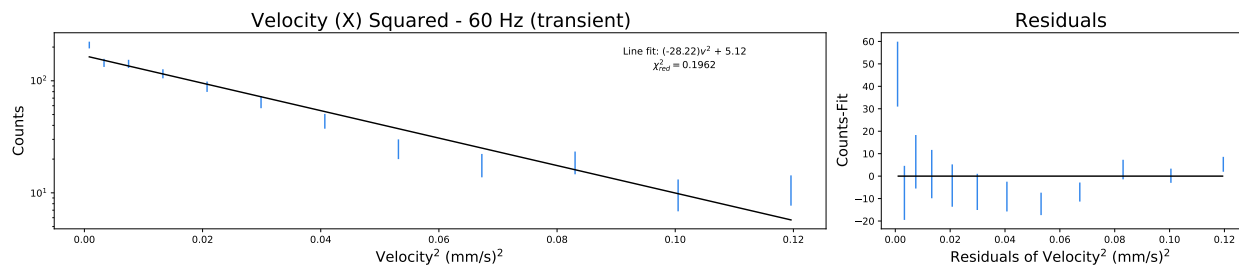


Figure 25

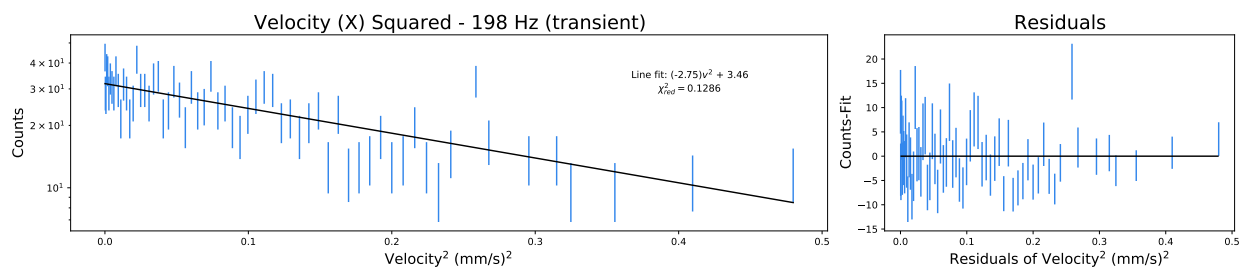


Figure 26