

Directed Study

High- T_c Superconductor

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March 25, 2015

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1 Introduction

The process steps are:

- a. Import data from csv file 0052, 0053, and 0054.
- b. Remove outlying y series 2σ away from mean value.
- c. Normalize each spectrum with the sum of mean value.
- d. Boxcar average filtered data with width = 10.
- e. Calculate gap size from filtered data, with the fourth derivative of the seventh degree polynomial fit of each spectrum, assuming the peak is at 0 mV.
- f. Visualize data.

2 Boxcar width: 10

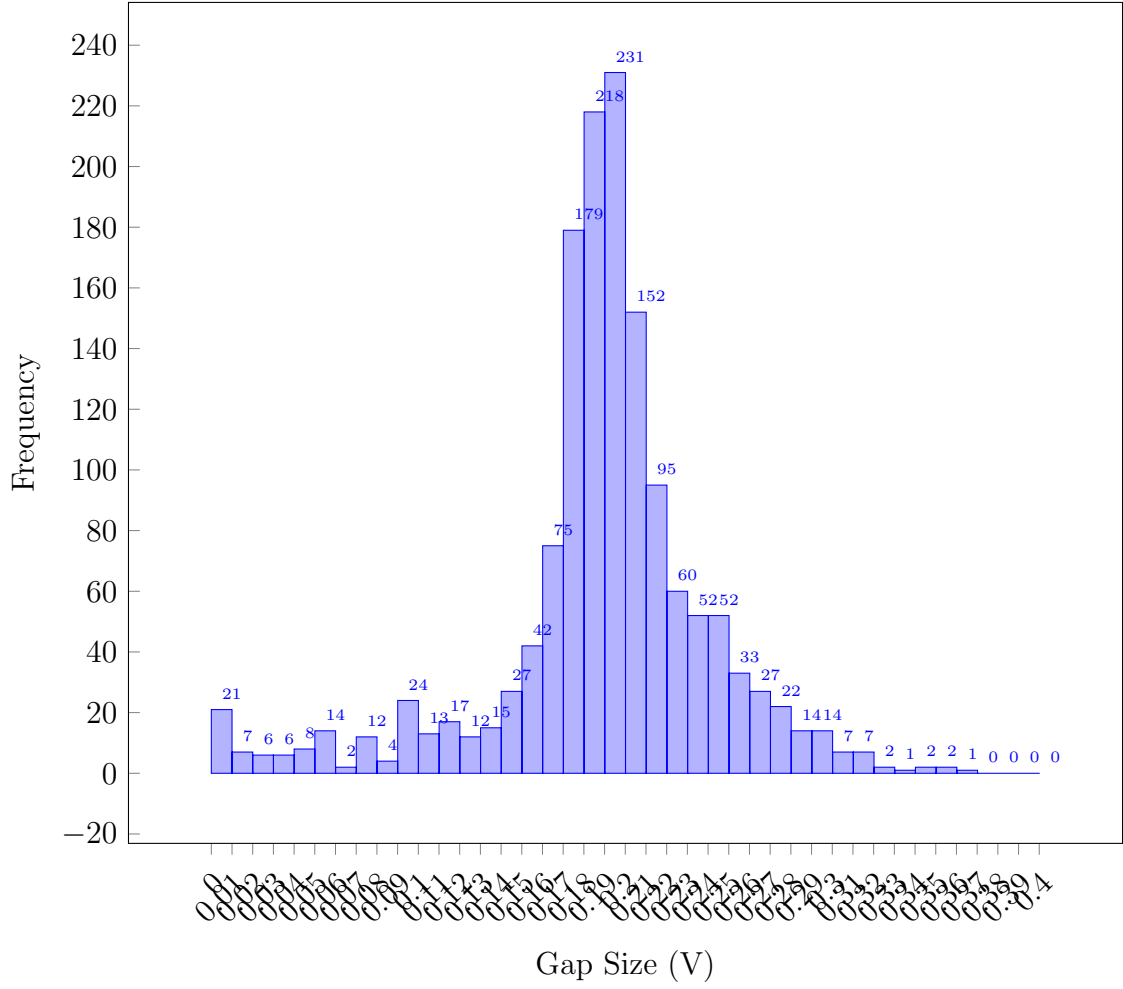


Figure 1: Histogram of gap sizes, 10-boxcared, data size 1476

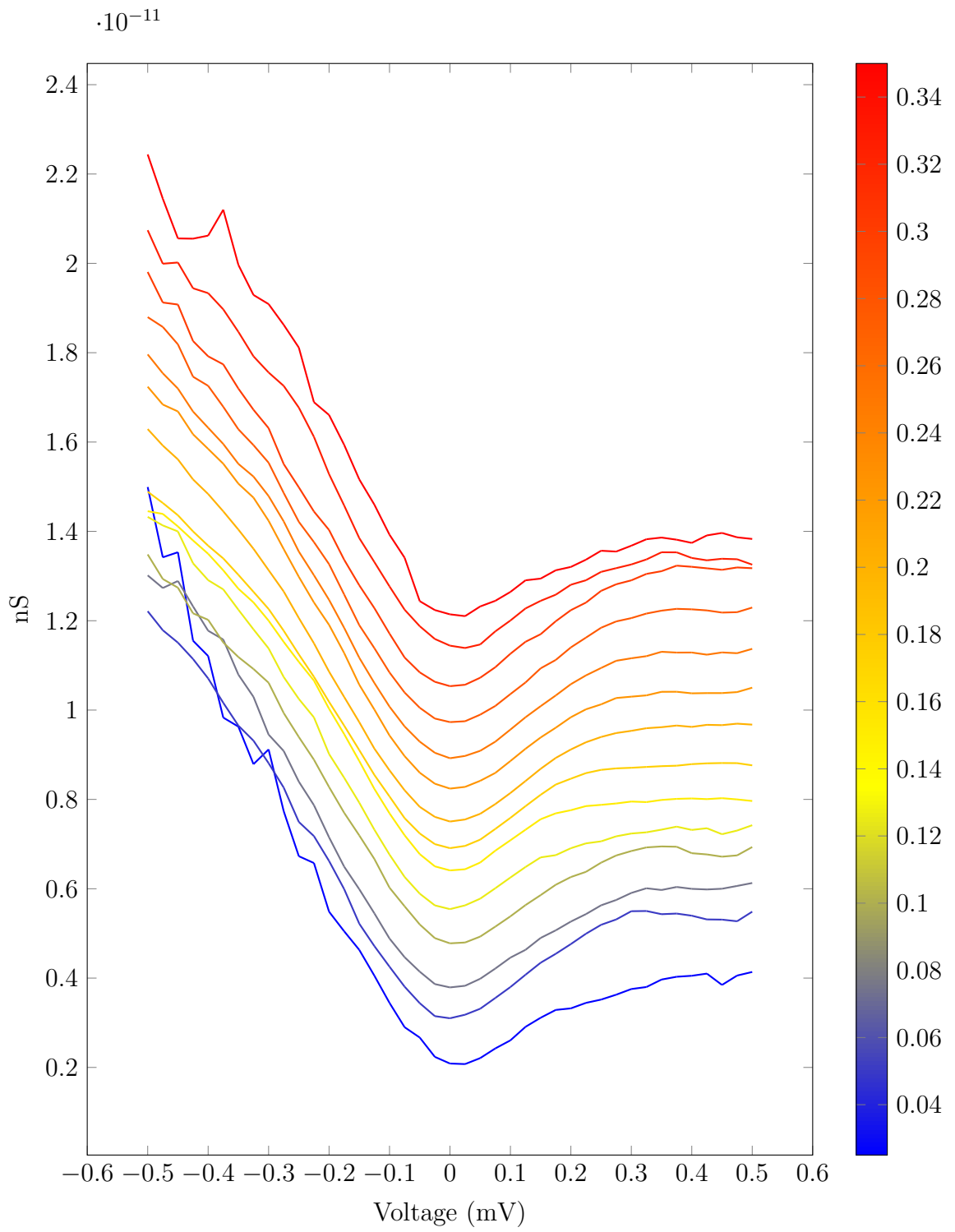


Figure 2: Averaged spectra for different gap sizes, with y -offset