

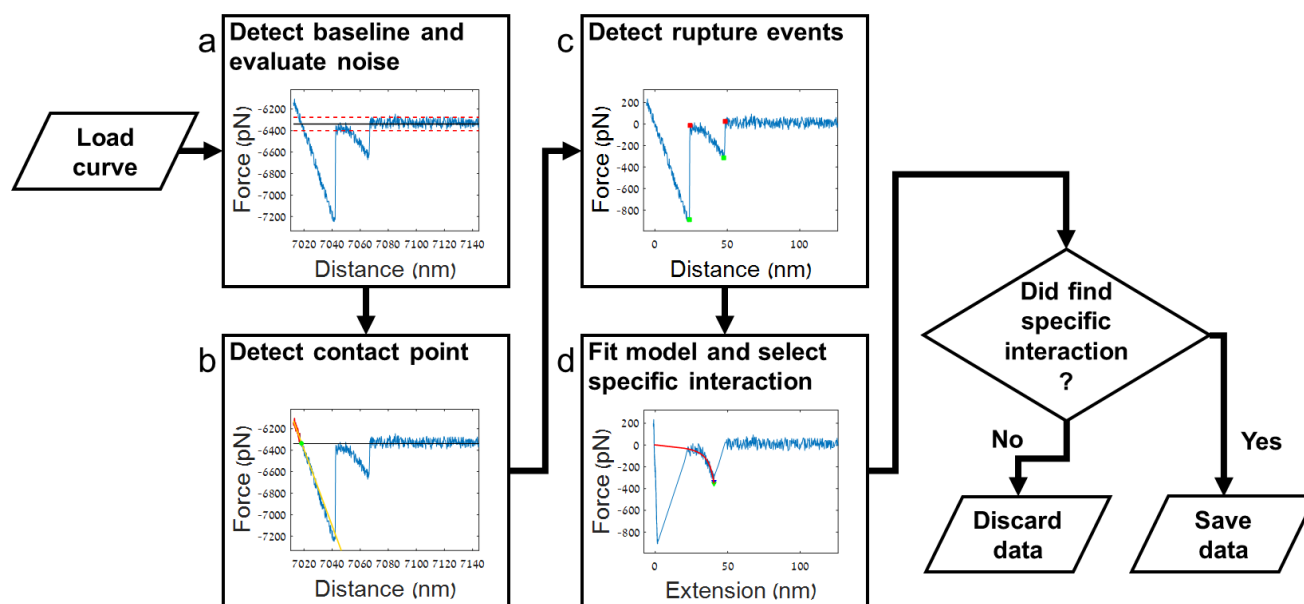
ForSDAT: A Fully Automated Data Analysis Toolkit for SMFS Measurements



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Analytical
Methods



PAPER

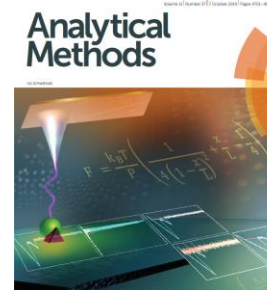
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ForSDAT: an automated platform for analyzing force spectroscopy measurements†

Tal Duanis-Assaf, Yair Razvag and Meital Rechesh



Analytical
Methods

Download source code from:

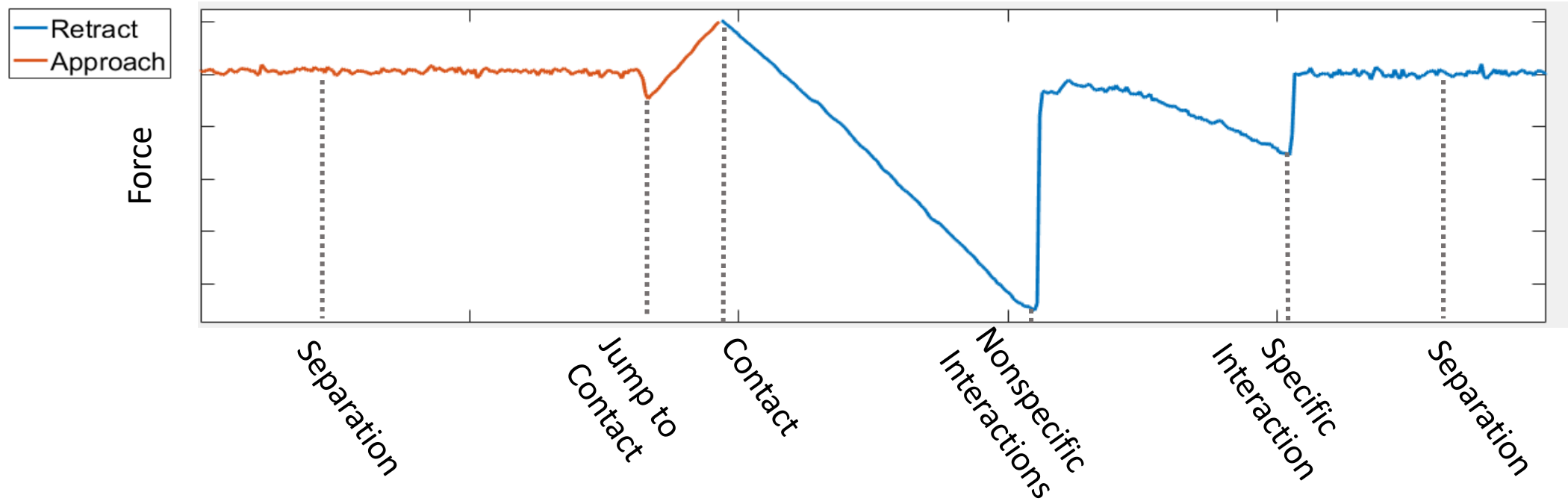
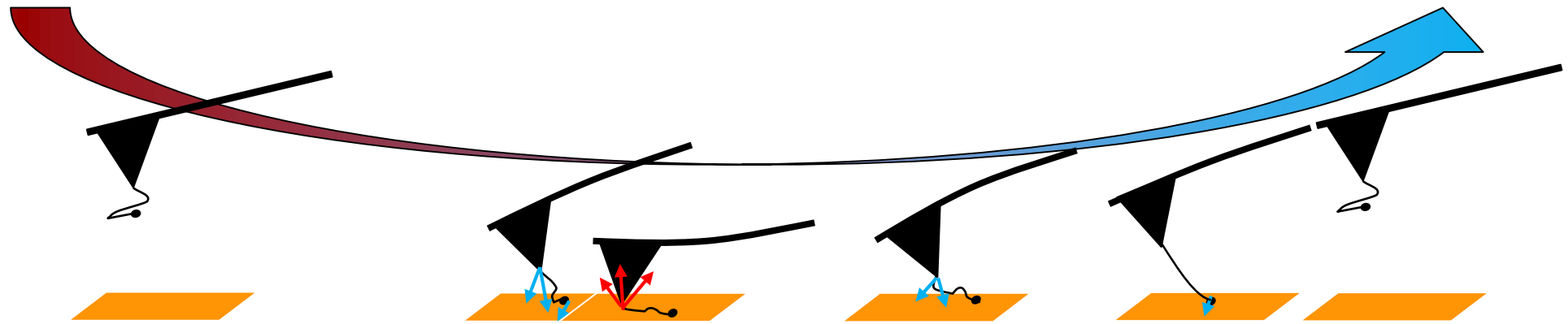
<https://github.com/TaDuAs/ForSDAT>

<https://www.mathworks.com/matlabcentral/fileexchange/81458-forsdat>

Single Molecule Force Spectroscopy

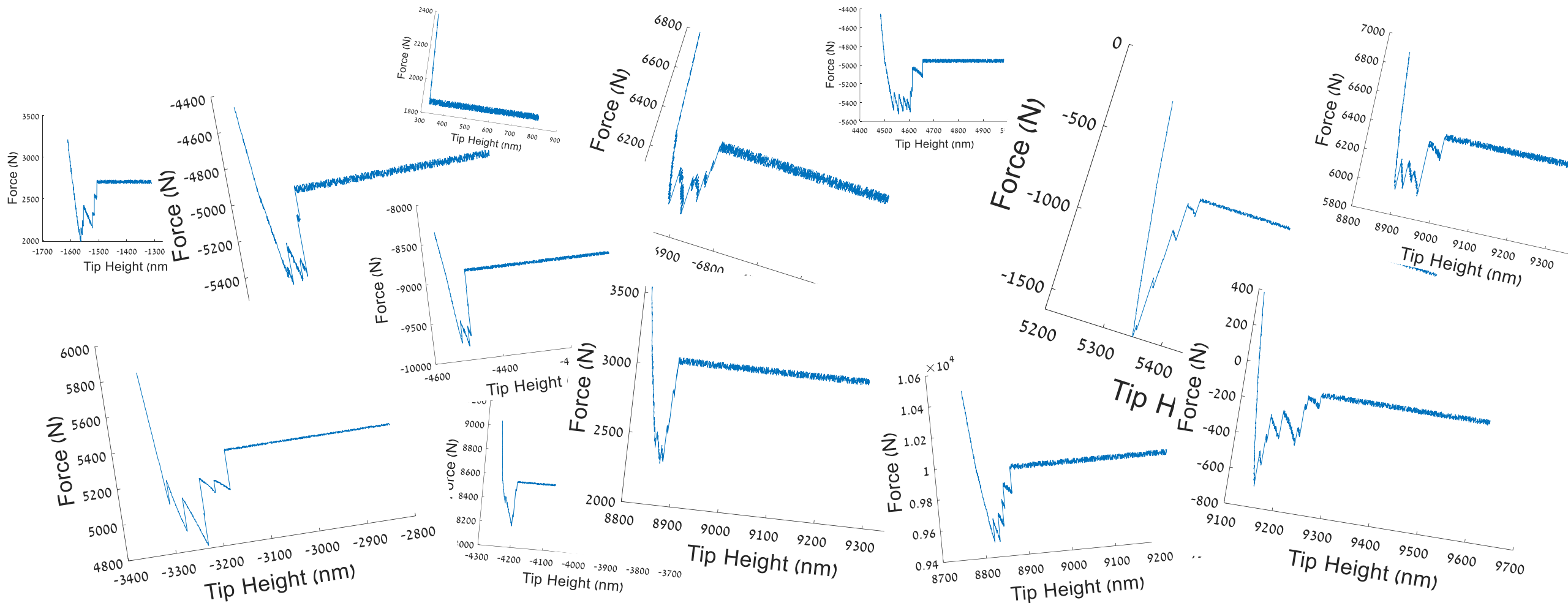
Approach

Retract



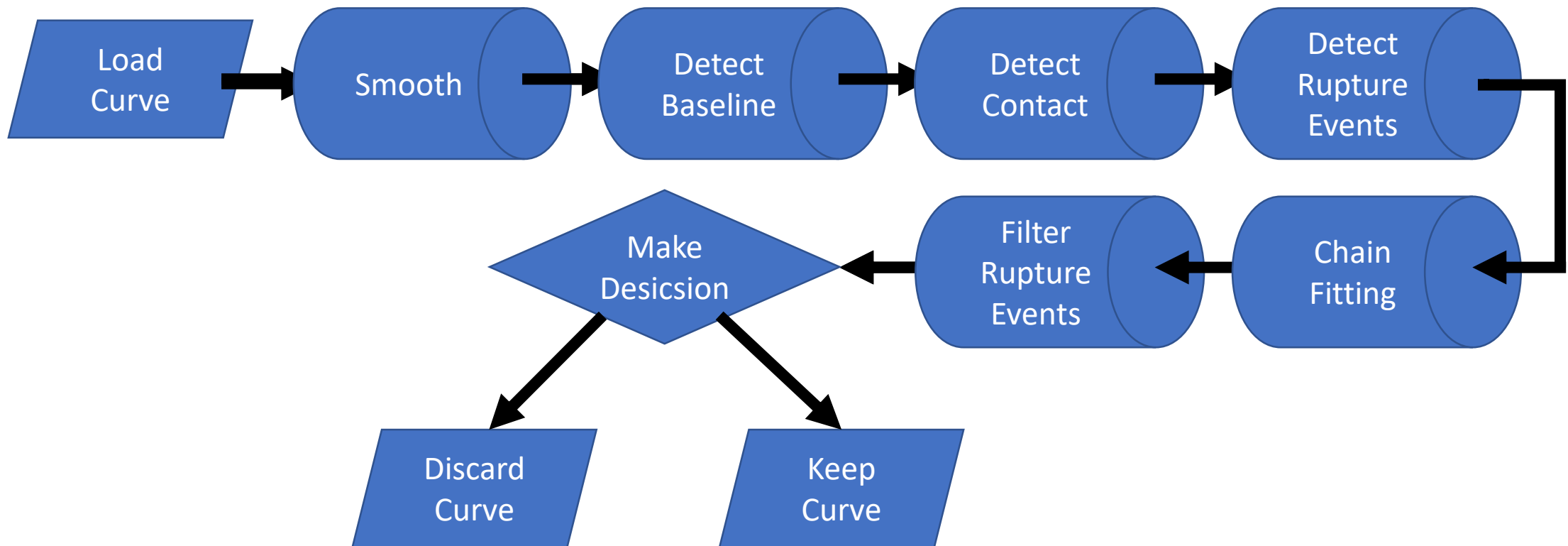
The Problem

- SMFS experiments produce a lot of data (up to 10^3 - 10^5 curves)
- Analysis is prone to human error and bias, and is extremely time consuming



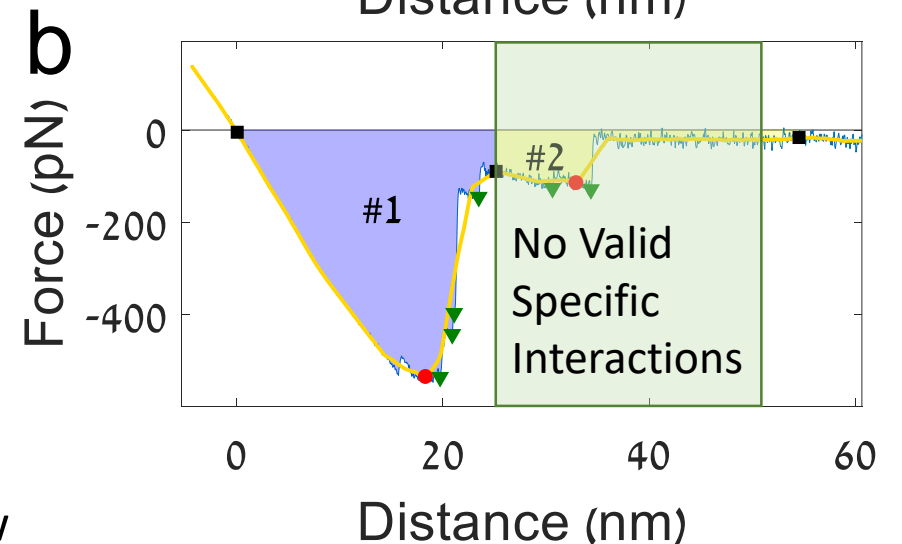
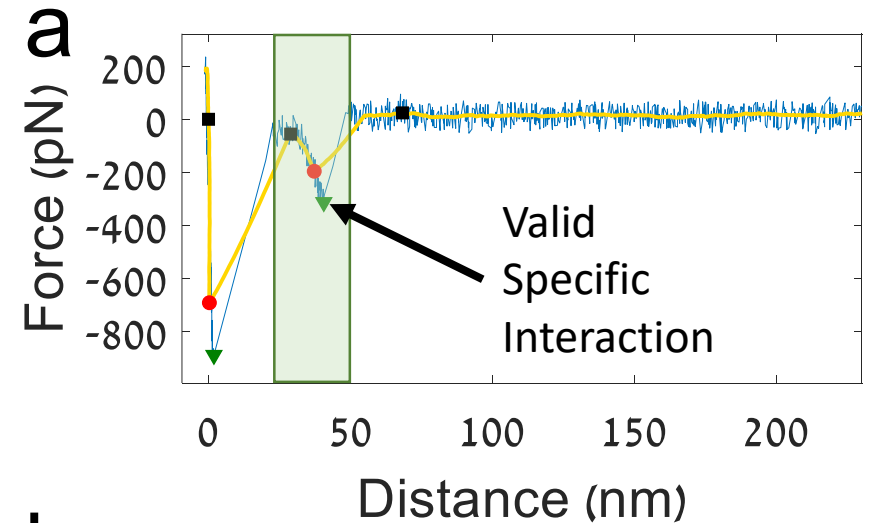
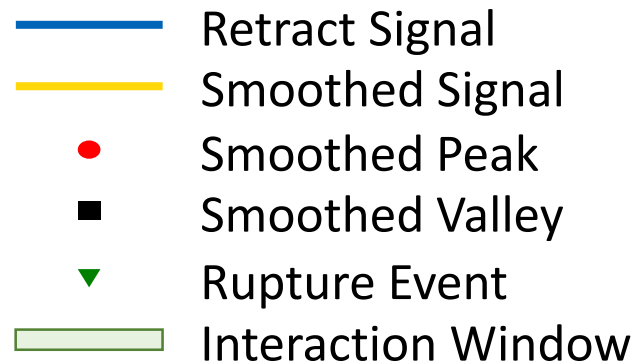
ForSDAT Analysis Process

- ForSDAT is a fully automated analysis software for SMFS data.
- ForSDAT Core analysis process is a pipeline of separate tasks.
- The tasks can be added, removed and reordered at need.

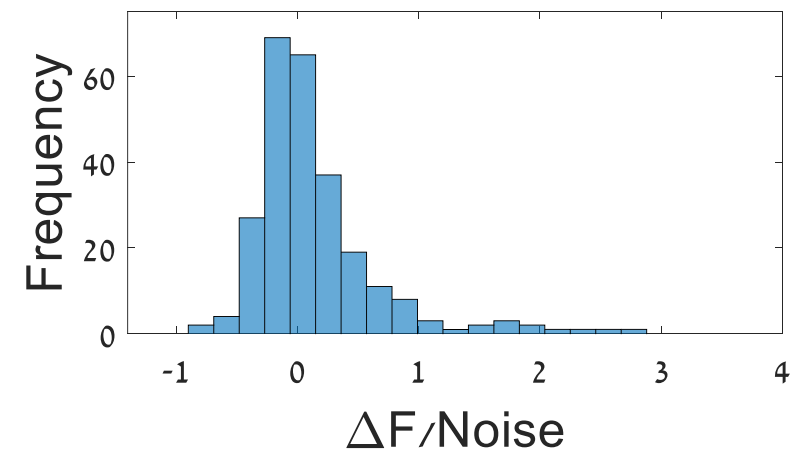
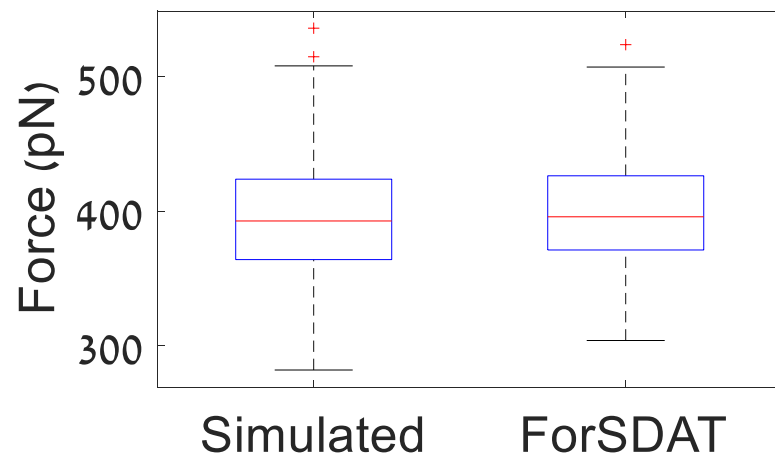
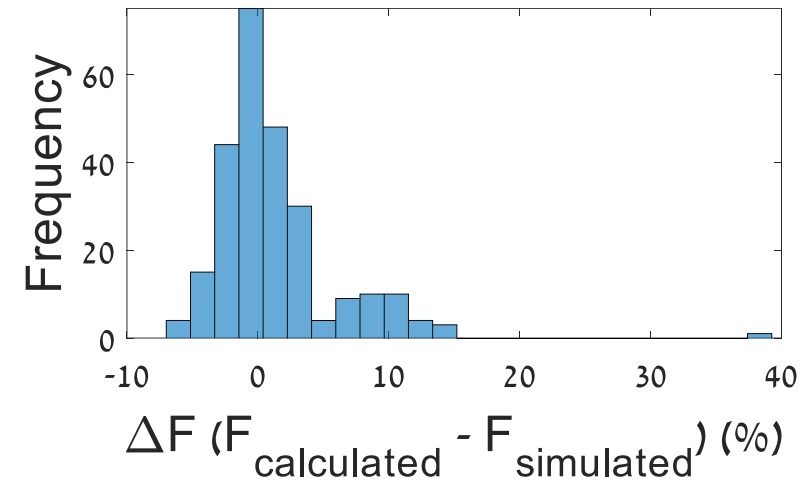
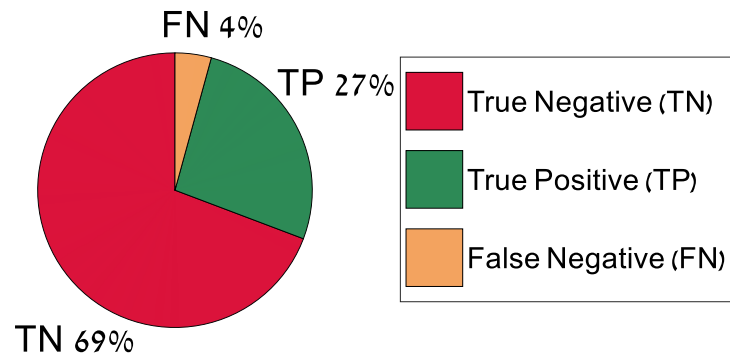


Specific Interaction Detection

- The signal is strongly smoothed
- Rupture events are correlated with smoothed signal peaks
- Specific interactions should not coincide with nonspecific interactions
- The interaction window is dictated by the linker length



ForSDAT Analysis Results



Take Home Message

If you perform SMFS measurements, consider ForSDAT for data analysis

The source code is available for download at:

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- <https://www.mathworks.com/matlabcentral/fileexchange/81458-forsdat>

THANK YOU FOR LISTENING