User Manual for Obliquely Striated Muscle Length-Tension Prediction Application

Purpose:

This is user manual was made to provide guidance when using the Obliquely Striated Muscle Length-Tension Curve web application. This tool allows users to understand the length-tension curve relationships of obliquely striated muscles.

Application Overview:

The application is an interactive interface that allows users to specify specific parameters related to the muscle's protein structure and then view the length-tension curve graph to represent the muscle with the given values. This application is intended for educational and research purposes.

Accessing the Application:

The application can be accessed by navigating to: Obliquely Striated Muscle (connorlevinson.pythonanywhere.com)

Parameters:

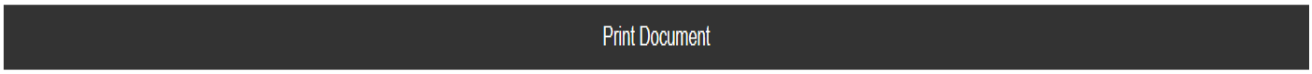
The four boxes allow you to input numbers for each parameter. The angle is limited to values between 0 and 90. The thick and thin filaments are limited to values between 0.1 and 20, however the most accurate values are between 0.8 and 10 for the thick filaments and between 0.5

and 6 for the thin filaments. The bare-zone length values are limited to 0.01 and 10, but they should be kept below the thick filament's length.

Submit Button:

When pressed, the submit button uses the values that the user has indicated to create and present the graph. If any values are invalid, when the submit button is pressed, it will tell the user and wait till the values are adjusted before working.

Print Button:



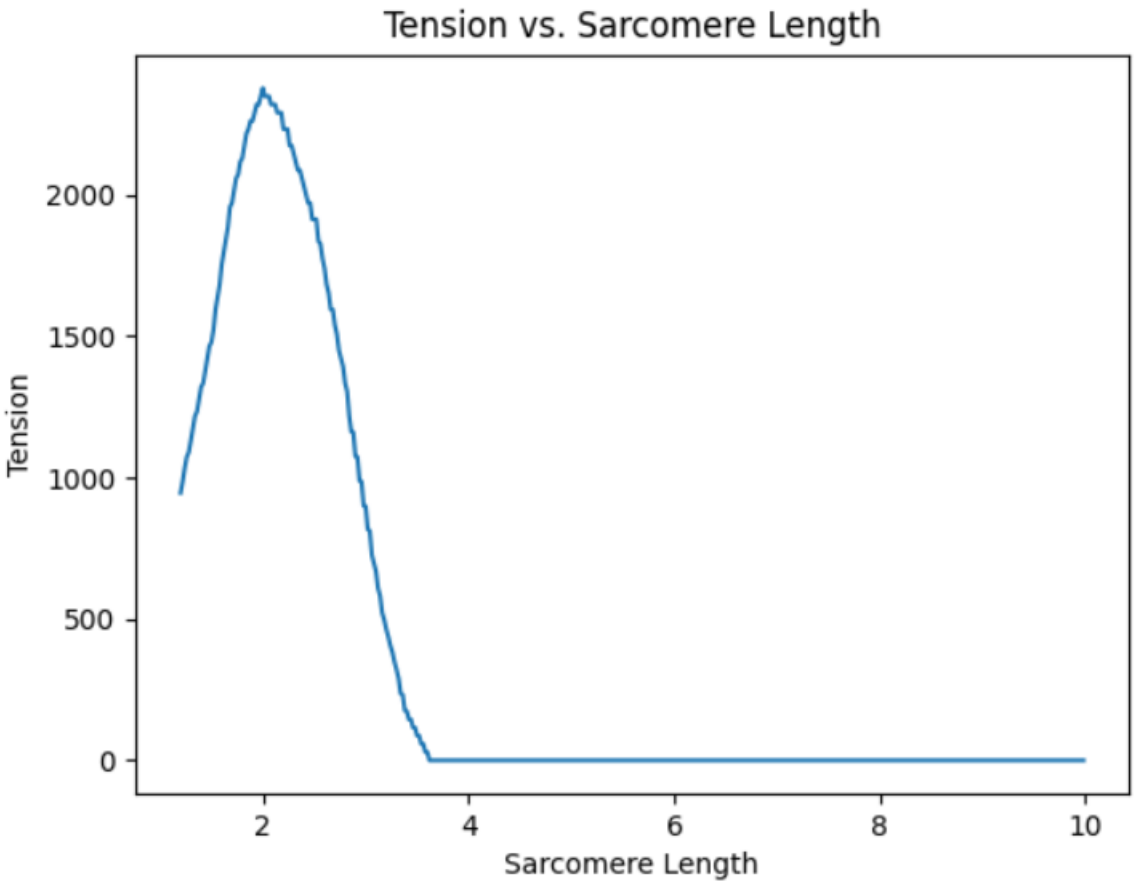
When pressed, the print button opens the print user interface. The print is a single page consisting of the current screen, but most importantly including the parameter values and the graph visual.

Share Button:

When pressed, the share button copies the current page's URL to the user's clipboard. This URL contains the path that keeps the values the user had input and the generated graph.

Interpreting Results:

Results



The result of the values is a graph of the length-tension curve of the protein structure given by the user. The x-axis is the length of the sarcomere, and the y-axis is the tension produced at that length.

Further Questions:

If you encounter any issues, please make sure that your variables are not only valid for the website, but within real world constraints. If you are still having issues, make sure your cookies are on, finally if any issues persist, contact c.a.levinson@email.msmary.edu or k.r.taylor-burt@msmary.edu