Updated functions of SimpleDSFviewer program

By Changye Sun (11/01/2016, University of Liverpool)

hscsun@outlook.com

Summary table:

1: Normalise the melting curve better

2: The melting curves are 'cut' to give a better view if needed

3: Added the temperature colour bar into the 96 wells map

4: Selectively save the analysed data

5: Analysed data extraction for Mac users

More details of the changes are describe below.

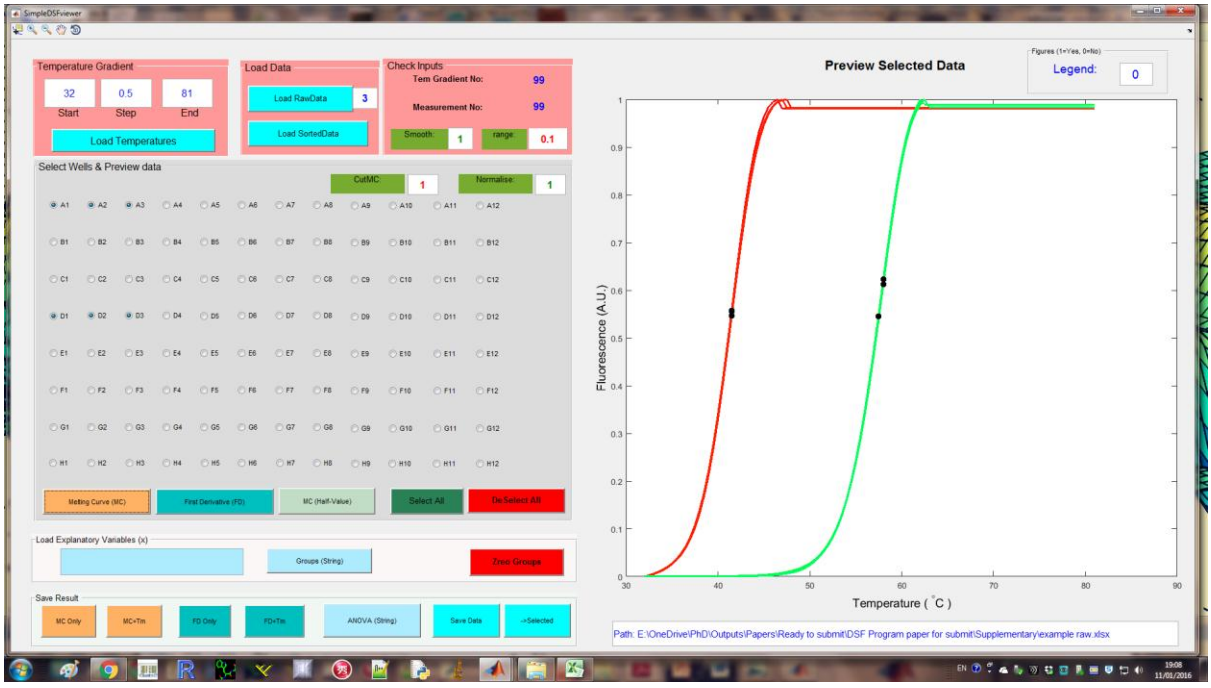

Figure 1: Screen of SimpleDSFviewer program. Two functions are added: 'CutMCs' and '→ Selected' (save selected analysed data).

1: Normalise the melting curve better

Equation 1: $$MC = \frac{MC - \min(MC)}{\max(MC) - \min(MC)}$$

MC: Melting curve values; min(*MC*): minimum value for the melting curve; max(*MC*): maximum value for the melting curve.

Change: The minimum value for the melting curve ($\min(MC)$) is selected from the fluorescence intensities before the maximum denaturation of the melting curve.

2: The melting curves are 'cut' to give a better view if needed

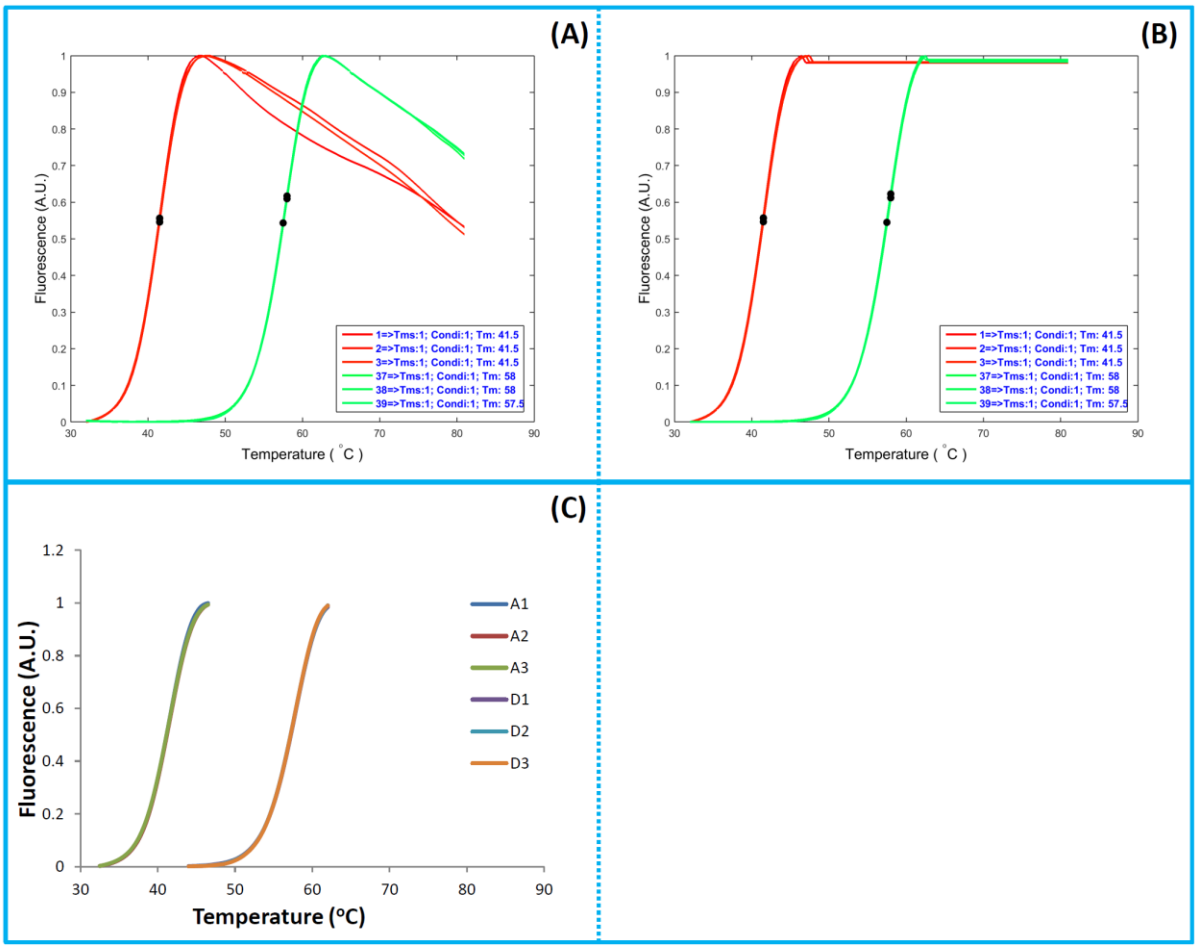

Figure 2: Cut the normalised melting curves. (A): Normalised melting curves without cutting. (B): Normalised melting curves with 'cutting' by change the values before the minimum value and after the maximum value. (C): Normalised melting curves with cutting by removing the zeros and 0.98s.

As in the figure, the fluorescence intensities before the minimum value are instead with 0 and the fluorescence intensities after the maximum value are instead with 0.98 to make the melting curves clear to view, although these two parts give some information sometimes.

3: Added the temperature colour bar into the 96 wells map

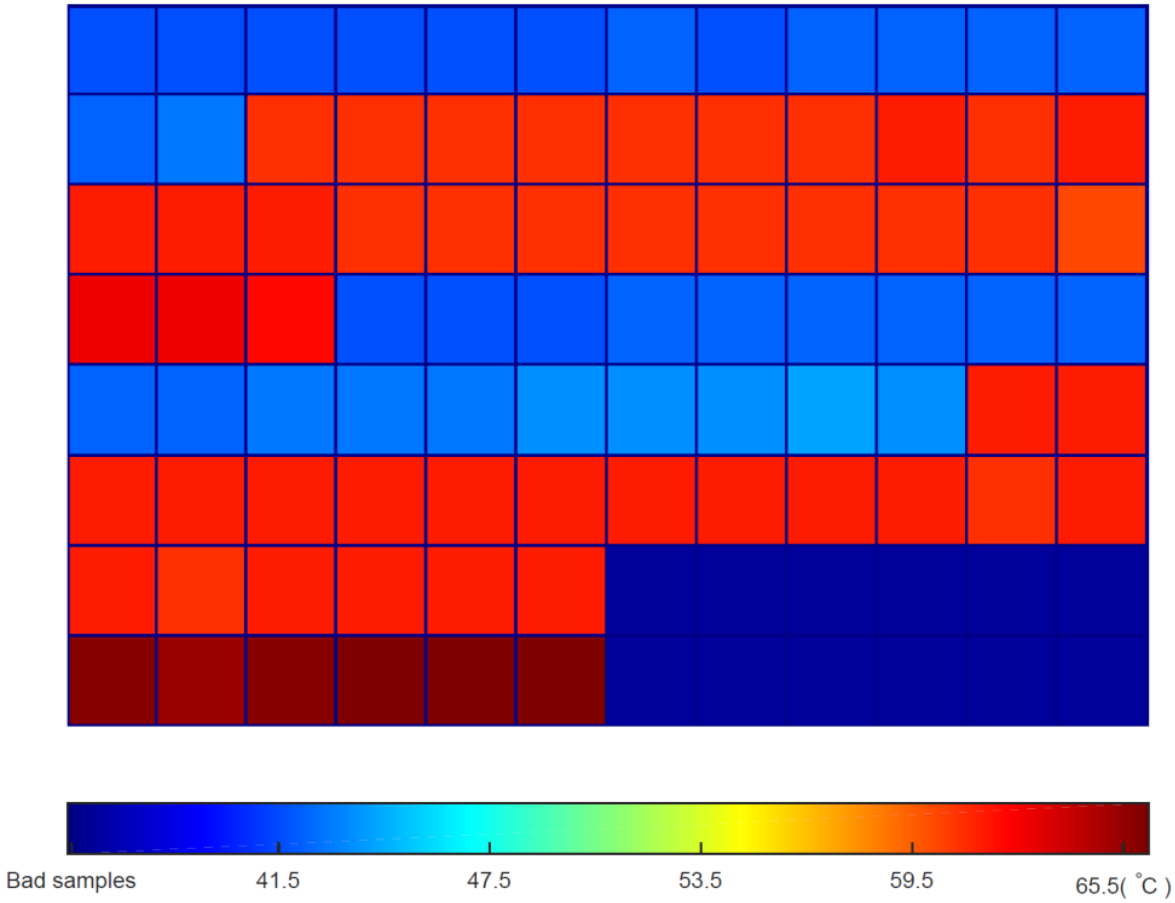

Figure 3: 2D map view of melting temperatures of the proteins in 96 wells

Change: As shown in the figure, the colour bar is labelled with temperatures.

4: Selectively save the analysed data

By click the '→ selected' button, the analysed data in the selected wells in the 'Select wells & preview data' panel will be saved.

5: Analysed data extraction for Mac users

The analysed data (selected or all) can be saved as '.mat' format by click the 'Save data' button, so these saved data can be loaded into the Matlab workspace by double click it. Mac users can manually copy these data into excel or other files, as is shown in Figure 4.

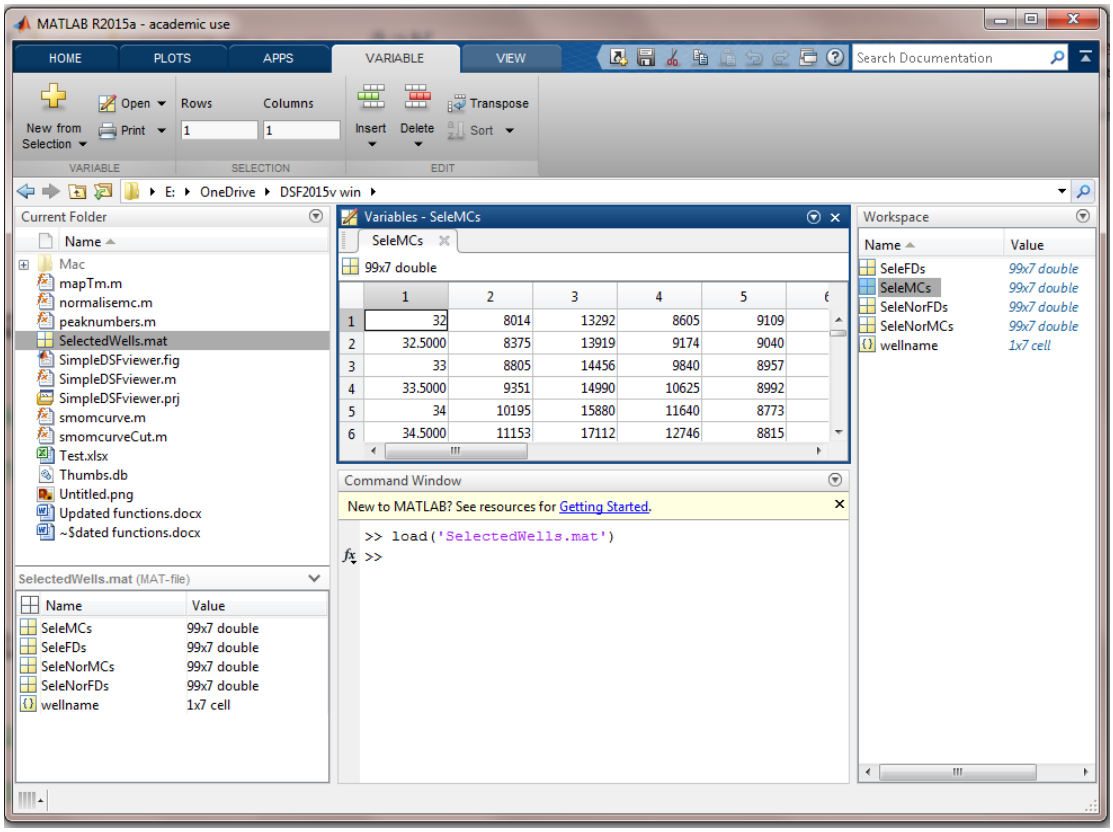

Figure 4: Load the selectively saved '.mat' file.