

- ✓ What is **NetCDF** Extractor V.2.1?

This version is the same as [NetCDF](#) Extractor V.2.1, but it has an API for plotting [contour and heat map graphs by NetCDF files](#).

For applying this tool, please following these steps:

Step 1:

Extract your data according to the previous versions.

Step 2:

After data extraction you can see a button with the name of “Create 2D Graphs”. Please see the following example in Fig. 1, for better understanding. By loading three files for precipitation variable of MIROC5 model, the [NetCDF](#) Extractor V.2.1 merges the files (Fig. 1).

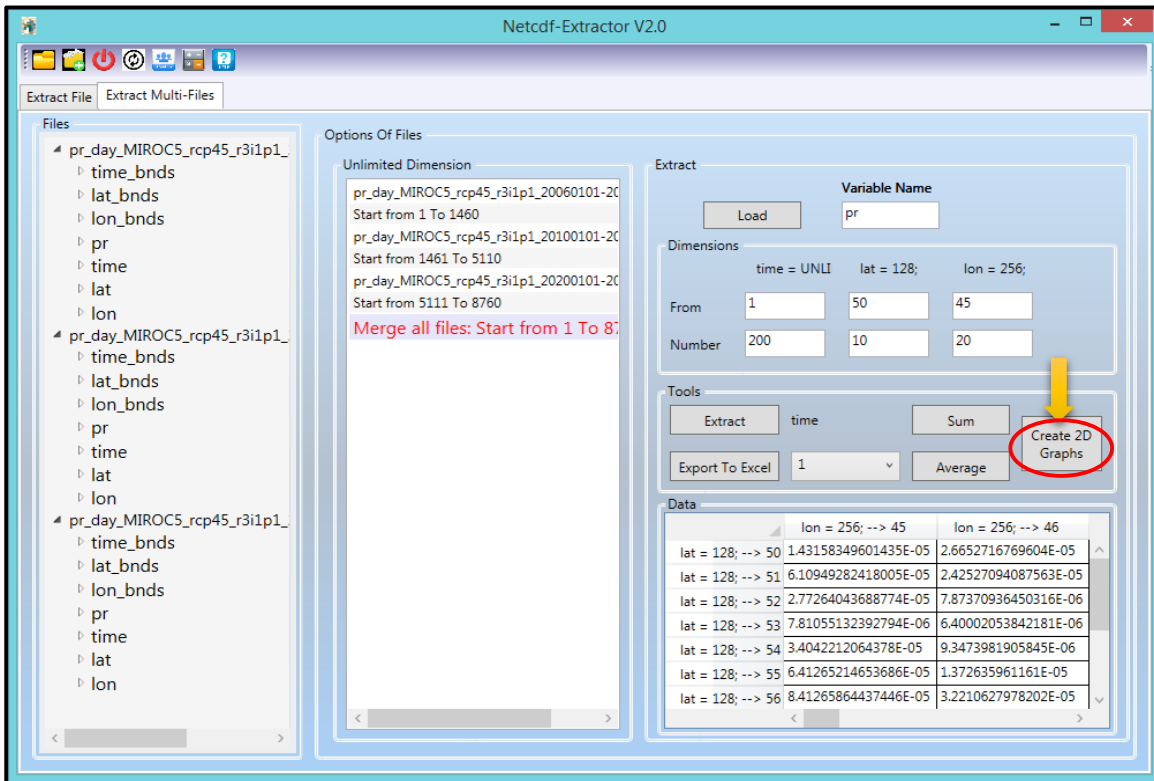


Fig. 1 The main screen with “Create 2D Graphs” button.

By clicking on the button of “Create 2D Graphs”, you can see the “Plot API” (Fig. 2). Before starting plot of your data, you can select the settings of text’s format of the plot. This process can apply from the menu that is located in the top of the Fig. 2. By clicking this button, a setting window will open (Fig. 3).

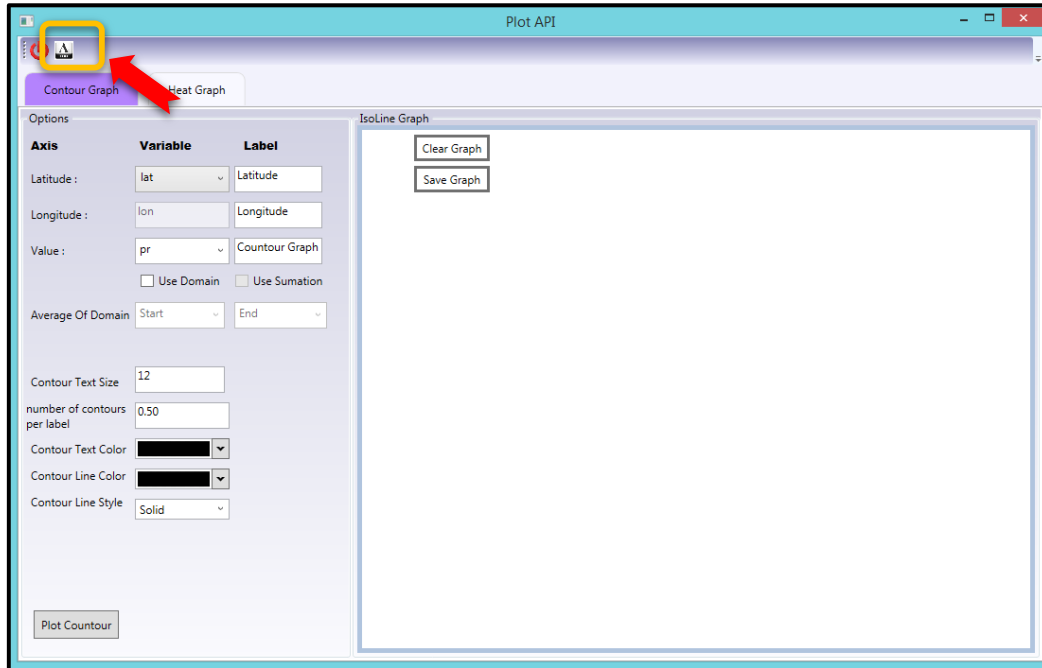


Fig. 2 The main screen with “Create 2D Graphs” button.

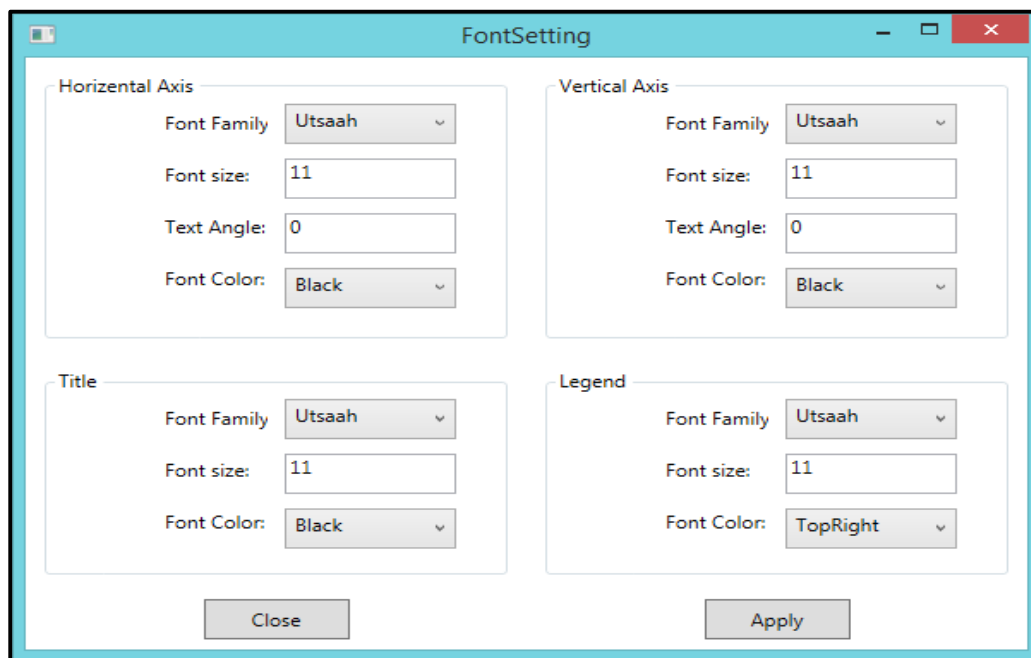


Fig. 3 The setting window for selecting the characteristics of the text’s plot.

These settings are easy to select and you can apply them for horizontal and vertical axes. Then you can select two tabs, namely “Contour Graph” and “Heat Graph”. We start by “Contour Graph” (Fig. 4, No. 1) in the [NetCDF](#) Extractor V.2.1. In Fig. 4, you can view the axes with their labels. The user can write and select a proper name for the specific axis. As you know, in this example the range of domain for time is 1 to 8760, so in the “value” option (Fig. 4, No. 2), you can select the domain of time for the precipitation value that you selected in the Fig. 1. In this example, we select 196, it means the value of precipitation for the time of 196. So, in the contour graph you can view the amount of precipitation of time=196 (Fig. 4, No. 2). In the “Contour Text Size” filed, you can select the of text’s size of the line’s contour (Fig. 4, No. 3).

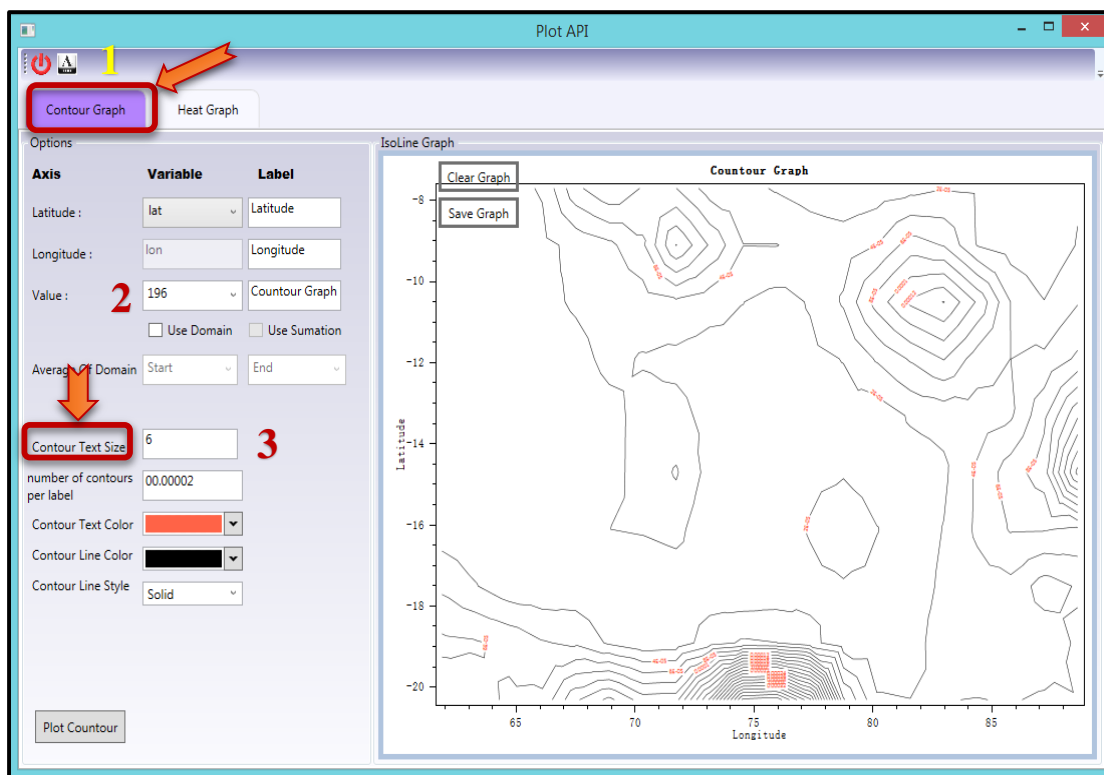


Fig. 4 The Plot API window for plotting graphs.

In the “number of contours per label” option, you can write a number for the precise of contours. Attention please, for the precipitation value, due to unit of this value in the CMIP5’s models, we would better to write this item in a proper format. In this example we write 0.00002 (Fig. 5, No. 1). This value is related to your selection. In the “Contour Text Color”, “Contour line Color”, and “Contour line Style”, you can select the colors of text and line and the style of contours (Fig. 5, No. 2, No. 3, and No. 4). By clicking the “Plot Contour” button (Fig. 5, No. 5), you can view the contour plot in the right hand of window.

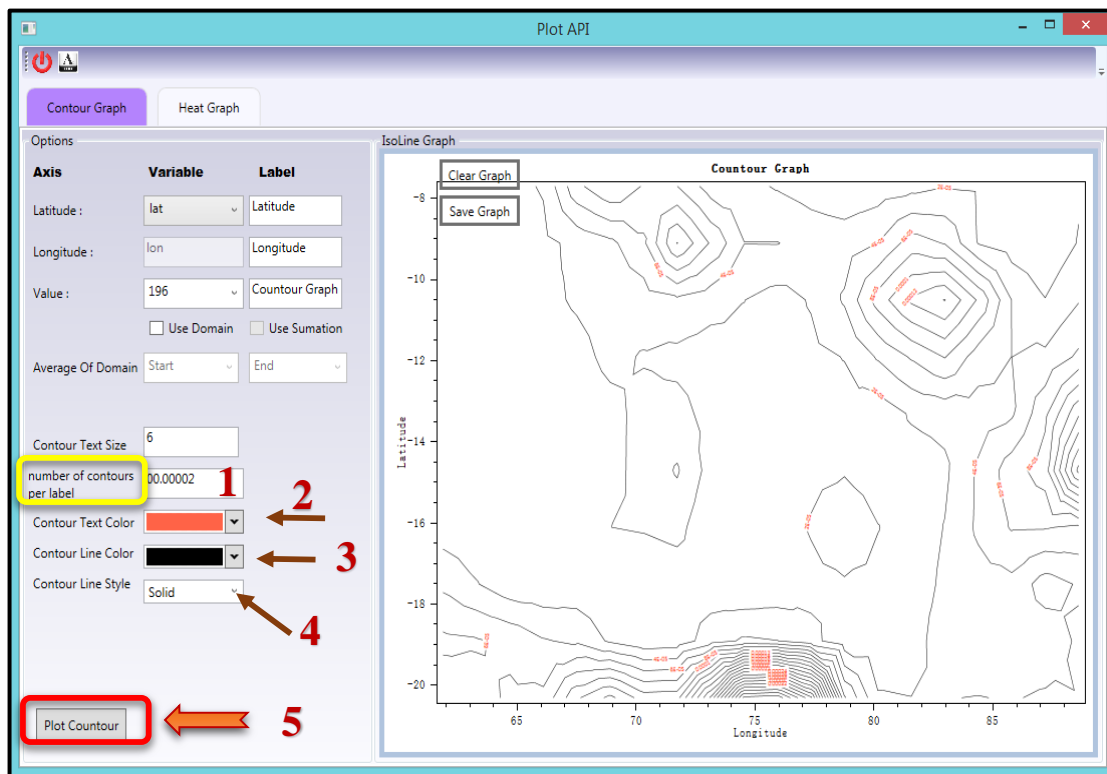


Fig. 5 The settings of Contour Graph for plotting graphs.

If you want to plot a contour graph for a specific domain of time, you can select the start and the end of the domain, according to the selected domain in the Fig. 1. In Fig. 6, you can see these options. In this figure, by clicking the “Use Domain” (Fig. 6, No. 1), the start (Fig. 6, No. 2) and the end (Fig. 6, No. 3) options will activate to enter the domains. Then you can set other options same as Fig. 5, such as color and style of line. Finally, by click on the “Plot Contour”, you can view the contour plot for a specific domain (Fig. 7). Furthermore, you can use the summation of values by selecting “Use Summation”.

In every plot process, you can clear or save the graph by two button that they located in the window of plot. According to the Fig. 7, No. 1 and No. 2, you can click on these buttons to clear the page or save the graph.

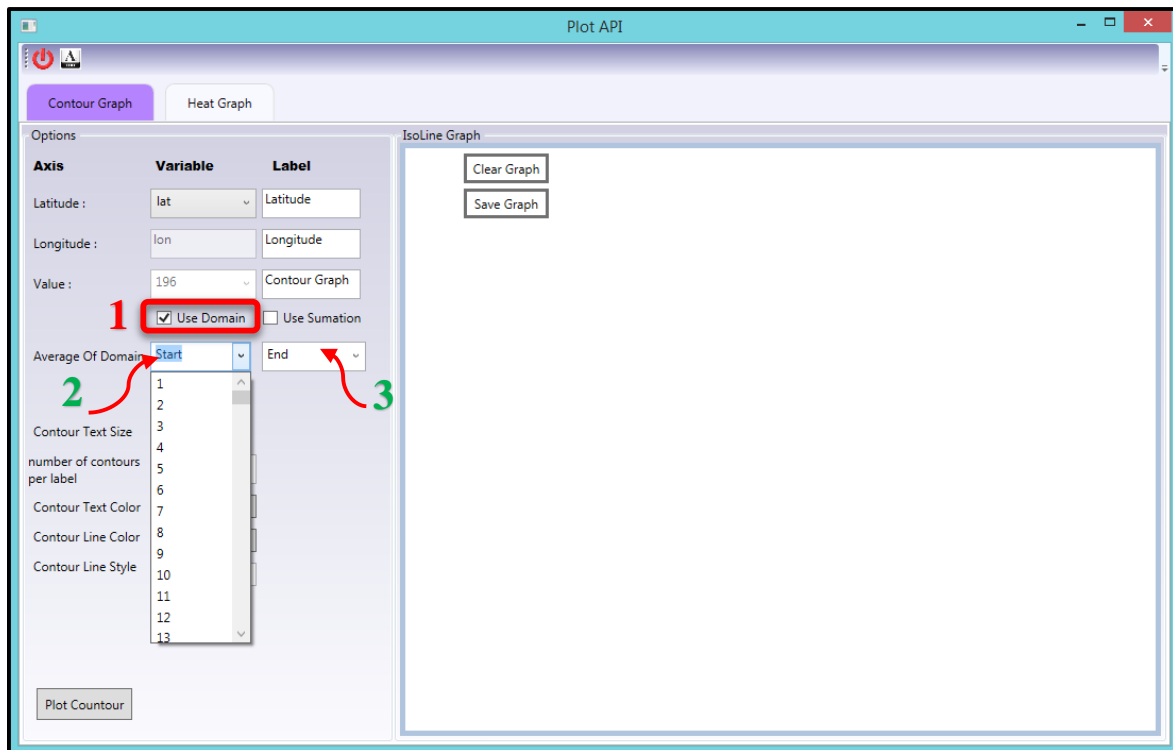


Fig. 6 The settings of Contour Graph for plotting graphs in a specific domain.

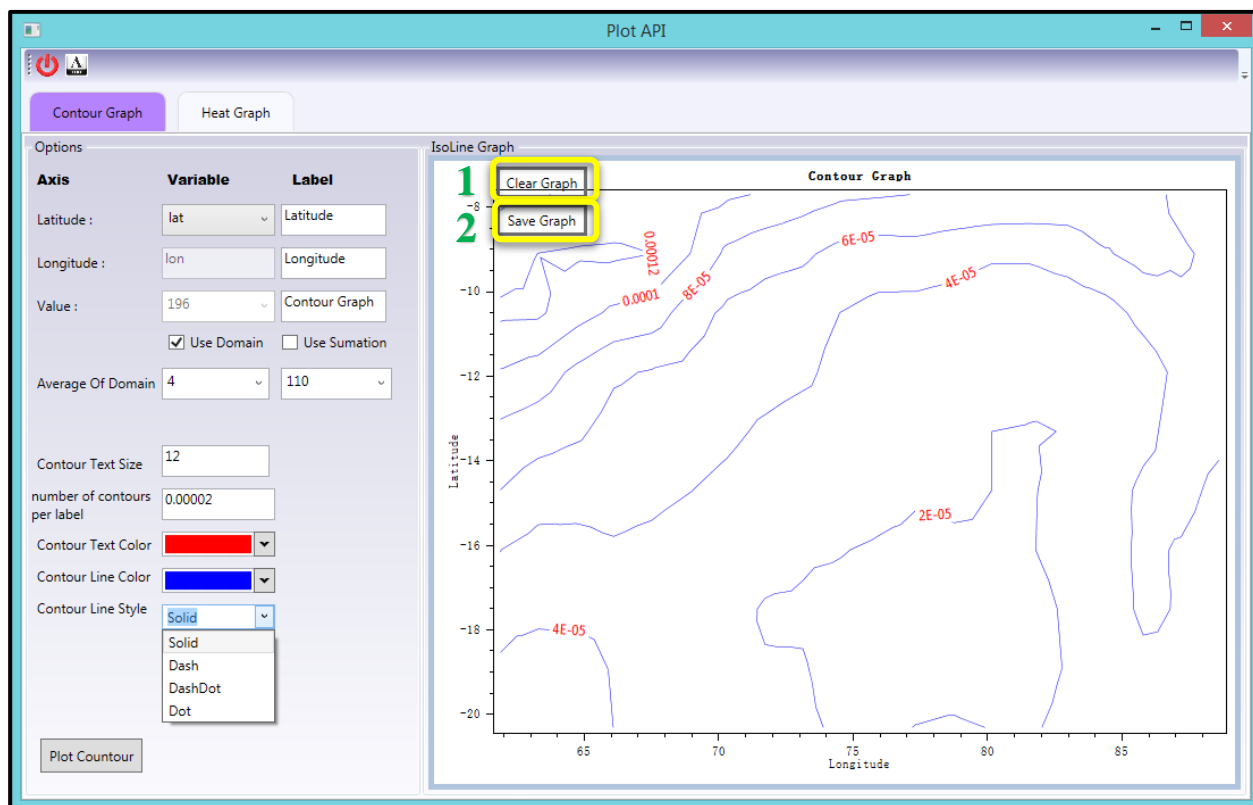


Fig. 7 A Contour Graph for a specific domain.

Step 3:

In this step, you can plot “Heat Graph” through this tab (Fig. 8, No. 1). In this option, you can fill the options same as step 2 and the “Contour Graph” in the [NetCDF](#) Extractor V.2.1. You can select a number for plot or a specific domain. Then set the size and colors of heat areas. In this option, you can add different color for every area of heat plot (Fig. 8, No. 2). By adding the number of colors you can add the further numbers of heat areas, and if you want to clear a color, you can select the color in the menu of colors and then click on the “Clear Color”. There is a bar that is located in the right hand of the heat graph, in the [NetCDF](#) Extractor V.2.1 (Fig. 8,

No. 3). Indeed, it is a legend for the range of changes of the area's color. If you want to see the values of the heat graph, you can select the “Show Value” option. Then you can see these values over the heat graph (Fig. 9).

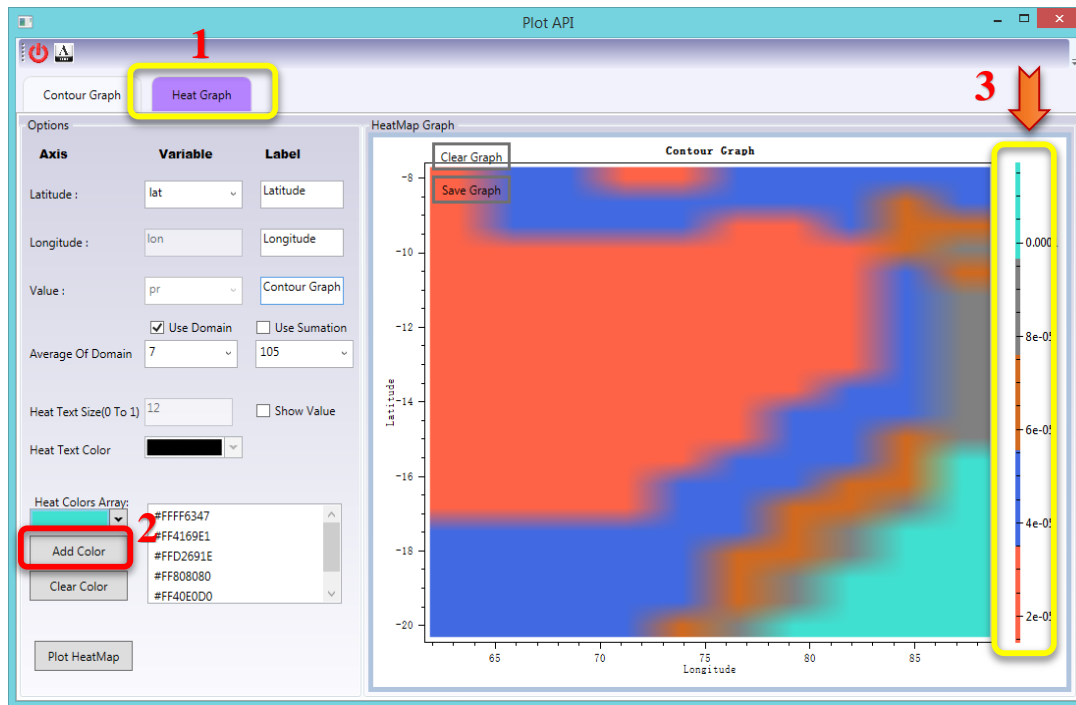


Fig. 8 The settings of the heat graph option.

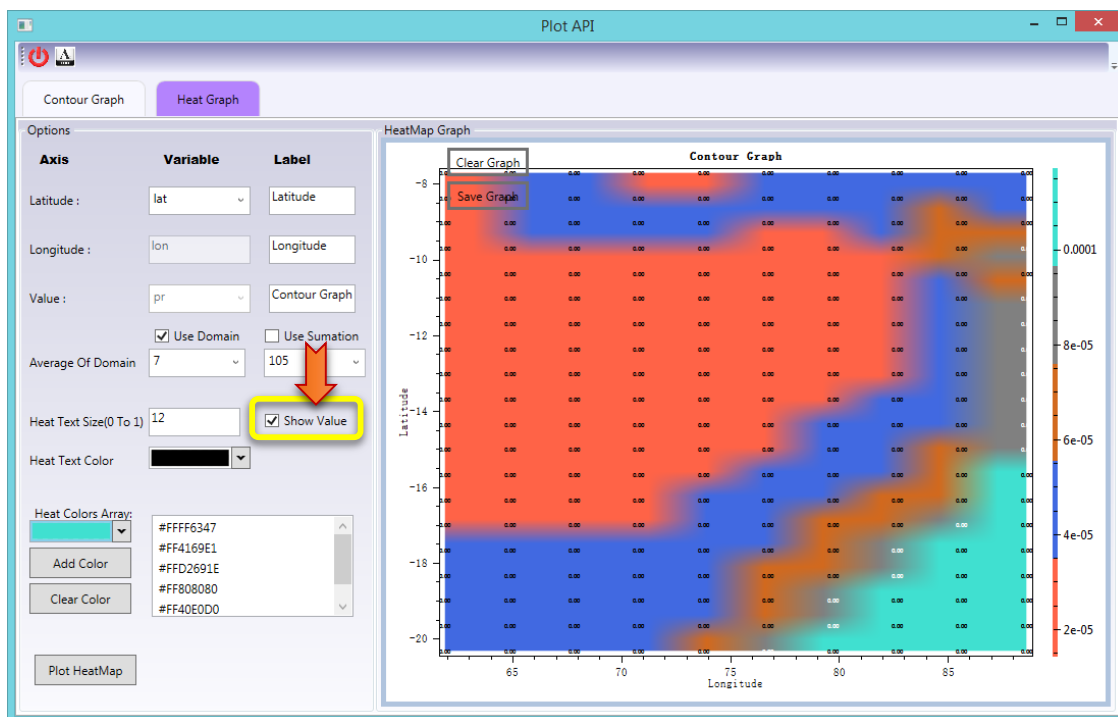


Fig. 9 Select the “Show Value” of the heat graph