

GSYS Digitizer (Ver. 2.4.7) Quick Manual/Practice (Rev. 2015-01-15)

(All working materials are available on <https://www-nds.iaea.org/nrdc/india/ws2015/>)

(1) Install

- 1-1. Get Gsys2.4.7.exe from the website (or <http://www.jcprg.org/gsys/>), and save it (e.g., on Desktop).
- 1-2. Start Gsys2.4.7 by clicking the exe file icon.
- 1-3. If it does not work, install Java Runtime Environment from <http://Java.com/>, and try again.

(2) Customize Properties

- 2-1. Select **Edit**, then select **Properties**.
- 2-2. Set Unmarked data = Green and Point size = 2.
- 2-3. Click **Apply**.

(3) Upload of Graph Image to GSYS

- 3-1. Get Fig. 3 ([dig-exc-fig3.pdf](#)) from the website.
- 3-2. Create png file for the area for digitization (e.g., by using Adobe Reader and MS Paint).
- 3-3. Drag and Drop the png image to the Gsys window.
- 3-4. Enlarge the Gsys Window *as much as possible* by the mouse.
- 3-5. Enlarge the graph image *as much as possible* by clicking **Magnify**.

(4) Define X- and Y-Axis

- 4-1. Click **Xa**. (The button becomes red).
- 4-2. Select two scales (tics) on the X-axis.
- 4-3. Provide the corresponding two X values to the Axis Manager window.
- 4-4. Do it for Y-axis with **Ya**. If the origin of x and y-axis is same, use ***Ya** and skip clicking of the origin.

(5) Mark Data Points

- 5-1. Click **Ad** until the button becomes red.
- 5-2. Click each data point in the figure.
(To remove a data point, select the data point to remove. Then click **Rm**.)

(6) Adjust Positions of Marked Data Points

- 6-1. Click **Ad** until the button becomes white.
- 6-2. Click a marked data point, and adjust the position by cursor keys (up, down, left, right).
- 6-3. To move to the next data point, try the F7 and F8 keys (depends on your environment).
(**Glass** button may be used to enlarge the particular data point in figure.)

(7) Mark Error Bars (for x-symmetric, y-symmetric and x-asymmetric, y-asymmetric)

- 7-1. Click **Xerr (sy)**, **X err (asy)**, **Y err (sy)** or **Y err (asy)** until the button becomes red.
(sy: symmetric; asy: asymmetric)
- 7-2. Mark the centre of each data point, then mark one end point (upper or lower) of its error bar to set the symmetric error. Mark the both end points (upper and lower) if the error bar is asymmetric.

(8) Adjust Length of Error Bars

- 8-1. Click **Xerr (sy)** (or another one) until the button becomes white.
- 8-2. Click the centre of a data point, then click the end point of upper (or lower) boundary of its error bar.
- 8-3. Adjust the length of the error bar by the cursor keys (up, down, left or right)

(9) Output Numerical Data and Compare Accuracy with the Original Data from Authors

- 9-1. Select **File**, then select **Output Numerical Data**.
- 9-2. Check if x/y (start/end) values and Scale (linear or log) are given properly.
- 9-3. Choose the expression (**Fixed** for linear scale, **Floating** for log scale).
- 9-4. Choose an appropriate number of Digits according to your expectation of accuracy.
- 9-5. Click **Write**.
- 9-6. Get the EXCEL sheet ([dig-exc.xls](#)) on the website, and open the sheet "Fig.3".
- 9-7. Copy and paste the digitized values to "your value" of the sheet. Check your standard deviation.

When you finish the exercise for Fig.3, do the same for Fig. 4 ([dig-exc-fig4.pdf](#)), Fig. 11 ([dig-exc-fig11.pdf](#)), Fig. 12 ([dig-exc-fig12.pdf](#)) and Fig. 13 ([dig-exc-fig13.pdf](#)).