Graphics and Graphs on Athena

RSI 2012 Staff

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Figures in LaTeX

- `\includegraphics` command
- Graphics can be scaled, rotated in LaTeX
- XFig: a drawing program
- `display`, `gv`: image viewers
- gnumeric: a spreadsheet

Putting a Graphic in Your Paper

Use the `\includegraphics` command inside a `figure` environment.

```
\begin{figure}[ht]\label{ceelogo}
\begin{center}
\includegraphics{cee.ps}
\end{center}
\caption{The CEE logo}
\end{figure}
```

Figure 1: The CEE logo

Refer to it as `Figure~\ref{ceelogo}`.

Placing Your Figures

`\begin{figure}[`*letters*`]`

where the *letters* can be:

h Place the figure right here, darn it.

t Place the figure at the top of the next page.

b Place the figure at the bottom of the page.

p Place the figure on a page of figures.

Put your favorite choice first. You are not guaranteed your first choice.

Scaling and Rotating Graphics

- `\includegraphics[scale=2]{cee.ps}`
- `\includegraphics[height=4in]{cee.ps}`
- `\includegraphics[width=5in]{cee.ps}`
- `\includegraphics[angle=45]{cee.ps}`

You can give several optional arguments:

```
\includegraphics[scale=2,angle=45]{cee.ps}
```


Several Graphics in One Figure

Put a `tabular` of graphics in the Figure:

```
\begin{figure}[hbtp]
\begin{center}
\begin{tabular}{cc}
\includegraphics{cee.ps}&\includegraphics{cee.ps}\\
\includegraphics{cee.ps}&\includegraphics{cee.ps}
\end{tabular}
\end{center}
\caption{Four times}
\end{figure}
```

If your graphics are of different sizes, you might need to use the `width` and/or `height` arguments to `\includegraphics`.

The Result

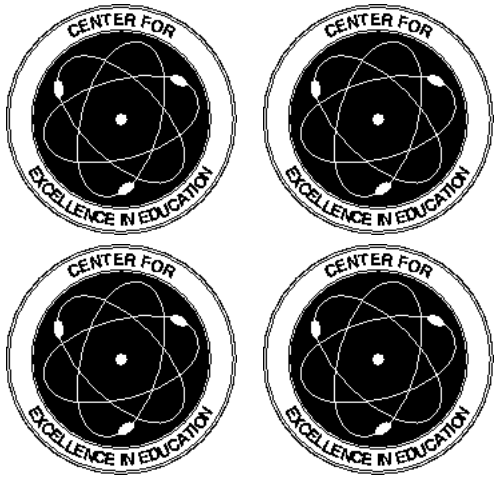

Figure 2: Four times

Xfig

- Use grids to make figure to scale
- Modify coordinates manually if needed
- Use `Fill` → `Pattern` to fill in areas
- You will need to use all three mouse buttons. The left button does what you would normally expect, the middle button generally completes a figure (closes polygons, etc.), and the right button generally discards.

Saving and Exporting

- DO keep the original `*.fig` format
- THEN export file to an image format (*not* `*.eps`)
- Come back later and modify the `*.fig` file

display and gv

- `display` is primarily a graphics viewing program though it has some image editing tools
- Use `display` to view images, crop or resize them, or turn them to greyscale
- You can also use `gimp` to take screen captures (if you need)
- `gv` will view postscript files

Gnumeric

- Gnumeric is a spreadsheet similar to MS Excel.
- ```
  athena% add gnumeric
  athena% gnumeric &
  ```
- Highlight data and click graph icon, modify options
- Do not use for tables! Use LaTeX tables.
  ```

Converting gnumeric to an image

- On chart: right-click, `Save as image`
- Enter file name (foo)
  Use `.png` for file type
- OR just make the table in LaTeX