

α -T_EX

L^AT_EX Meets Wolfram

α -T_EX is a L^AT_EX package which incorporates the typesetting ease on control of L^AT_EX with the power of the Wolfram Language. Some examples are seen below.

```
\usepackage{alphatex}
```

Graphics

```
\graphic{Plot[ Tan[x], {x, 0, 2*Pi}]}{tan}
```

```
\begin{figure}[h!]  
\centering  
\includegraphics[width=0.6\textwidth]{tan.png}  
\caption{Plot of  $\tan(x)$  generated with the Wolfram API}  
\end{figure}
```

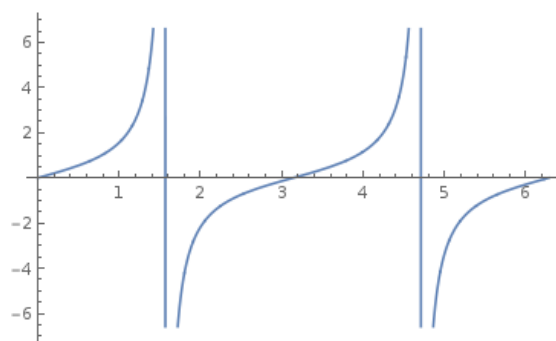


Figure 1: Plot of $\tan(x)$ generated with the Wolfram API

```
\graphic{ListPlot[ {1,2,2.5,2.9,3} ,PlotStyle->Red,Axes->False,Frame->True,FrameLabel->{"He"  
  
\begin{figure}[h!]  
\centering  
\includegraphics[width=0.6\textwidth]{plot.png}  
\caption{Some points plotted with the Wolfram API}  
\end{figure}
```

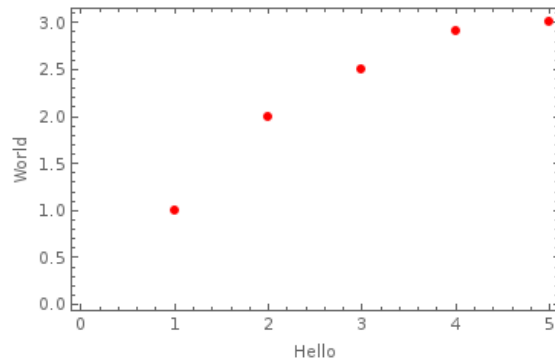


Figure 2: Some points plotted with the Wolfram API

Additionally, α -**T_EX** supports error bars

```
\graphic{ErrorListPlot[{{0.5,0.1},{1,0.1},{1.7,0.5},{2,0.1},{3,0.2}}]}{plot}

\begin{figure}[h!]
\centering
\includegraphics[width=0.6\textwidth]{plot.png}
\caption{Error Plot generated with the Wolfram API}
\end{figure}
```

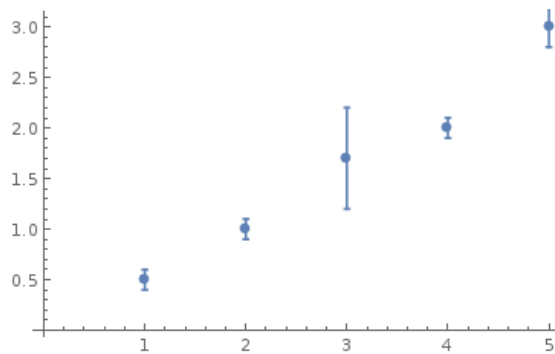


Figure 3: Error Plot generated with the Wolfram API

Using Data Files

If you would like to make a plot using data stored in files on your computer, you could use α -**T_EX**'s `\dataplotCSV` and `\dataplotTXT` commands.

```

\dataplotTXT{data.txt}{ListLinePlot}{dataplot}

\begin{figure}[h!]
\centering
\includegraphics[width=0.6\textwidth]{dataplot.png}
\caption{Plot of random dataset Stored in a sperate file}
\end{figure}

```

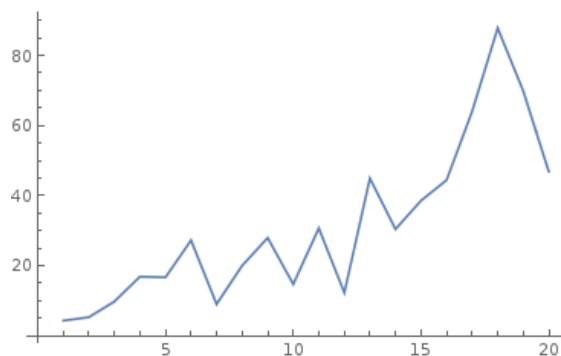


Figure 4: Plot of random dataset stored in a seperate file

3D Graphics

α -**T_EX** also allows for remote 3D graphics, such as this [quadratic](#) , this [sphere](#) and this [sinusoid](#) .

Calculations

$3 \times 4 \sin\left(\frac{\pi}{4}\right) =$ $\backslash\mathrm{calc}\{3*4 \operatorname{Sin}[\mathrm{Pi}/4]\}$

$3 \times 4 \sin\left(\frac{\pi}{4}\right) = 6\sqrt{2}$

$\int_{10}^{30} e^x dx =$ $\backslash\mathrm{calc}\{\mathrm{Integrate} \left[\mathrm{Exp}[x], \{x, 10, 35\}\right]//N\}$

$\int_{10}^{30} e^x dx = 1.58601 \times 10^{15}$

$\frac{d}{dx} x^2 \log(x) =$ $\backslash\mathrm{calc}\{D[x^2 \operatorname{Log}[x], x]\}$

$\frac{d}{dx} x^2 \log(x) = x + 2x \log(x)$

Wolfram Alpha

The biggest city in china is $\backslash\mathrm{WolframAlpha}\{ \operatorname{biggest city in china} \}$.

The biggest city in china is Shanghai.

The integral of $\sin(x)$ is $\backslash\mathrm{WolframAlphaMath}\{ \operatorname{integrate} \sin x \}$.

The integral of $\sin(x)$ is $-\cos(x)$.