LaTeX Figures using TIKZPICTURE, PGFPLOTS & OVERPIC

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Abstract

Some examples of how the packages `tikz`, `pgfplots` can be used to create fully vectorized graphics directly in the latex document. An example of how a flow chart can be generated in latex is also given. It combines the packages `tikz` and `overpic` and shows how to overlay/embed intrinsic latex text onto images created elsewhere.

Figure 1, is the first example illustrating how to graph analytical functions with `tikzpicture` directly in latex. and how to colourise and label them.

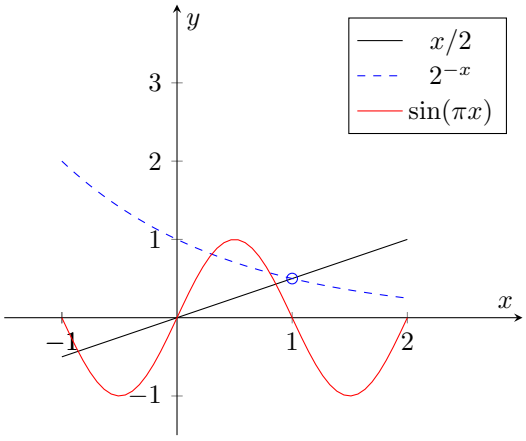

Figure 1: Graphs of three analytical functions.

The second example is illustrated by Fig. 2, which depicts data from the plain-text file `xf1f2.txt` located in the subfolder `Data`. The data file has 3 columns containing in its 1st column a list of x-values and values for the data $y = f_1(x)$ and $f_2(x)$, listed in column 2 and 3, respectively.

The second example is a flowchart including images inserted using the package `overpic`. It illustrates a solution procedure which can be applied to estimate the wear depth according to (1), i.e.,

$$\Delta h_{ij} = k\Delta sp_{ij} + u_{p_{ij}}. \tag{1}$$

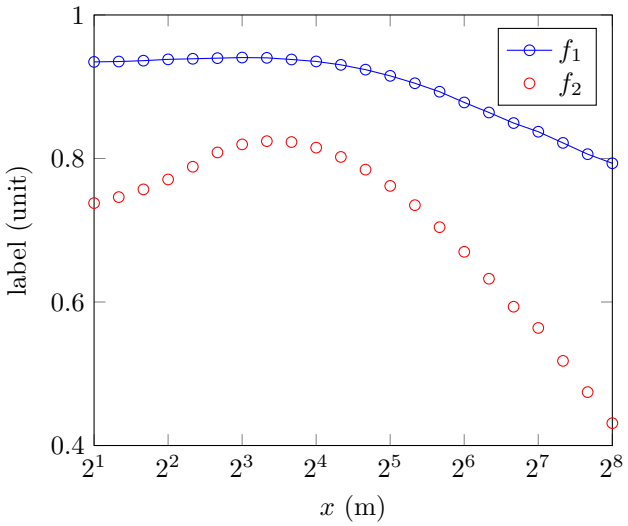

Figure 2: Graphs of the data in the text file `xf1f2.txt` for the two functions $y = f_1$ and f_2.

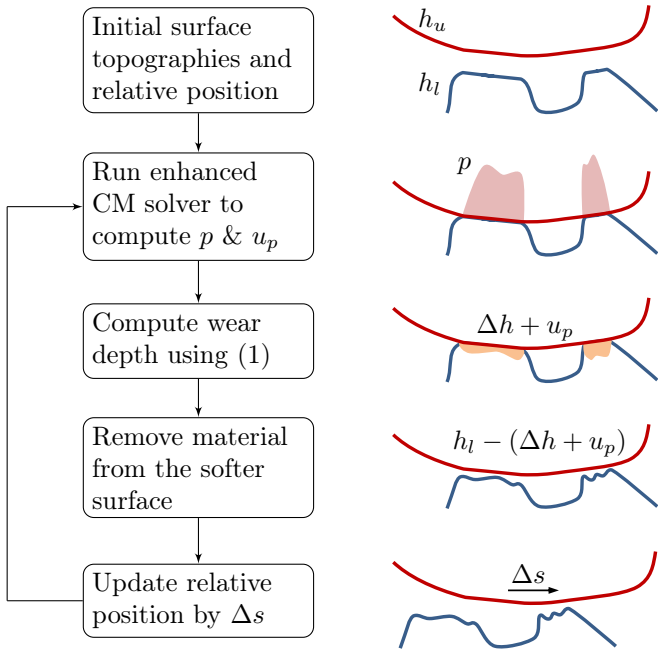

Figure 3: Flow chart of the solution procedure used for wear prediction. It shows how to combine `tikz` and `overpic` to overlay/embed intrinsic latex text onto images created elsewhere