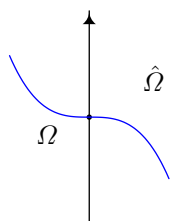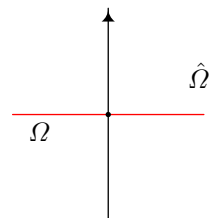# SOME METAPOST EXAMPLES USING THE PACKAGE MFPIC

CLAUS GERHARDT

Place the MFPIC command `\opengraphsfile{filename}` shortly **before** the `\begin{document}` command, where `filename` is identical to the name of the (root) tex file. In this special example we use the minipage environment to place two graphics side by side, however, in most cases it suffices to simply center the mfpic graphics. The `\closegraphsfile` command has to be placed at the end of the (root) file.

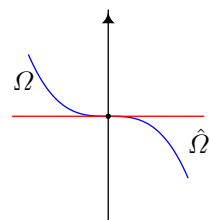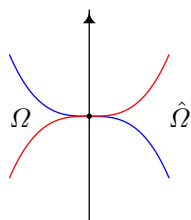To produce and load the graphics you should run the script "metapost complete".

A globally defined single brane.

The totally geodesic brane
$\{t = \text{const}\}$.

Below are two examples of colliding branes. The t-axis represents the black (white) hole singularity.
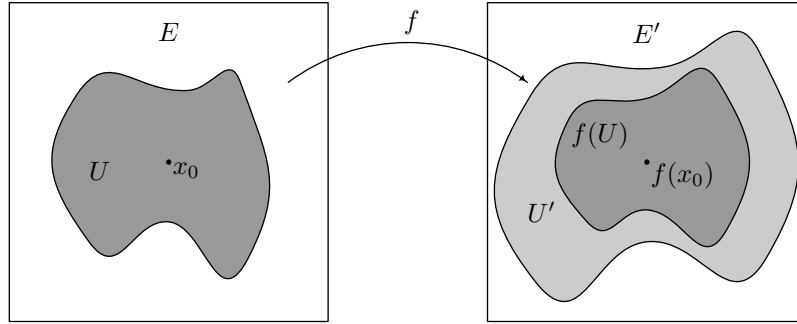

The definition of continuity for a function $f : E \to E'$.

0.1. **Definition.** Let E, E' be metric spaces and $f : E \to E'$ a map. f is called *continuous* at $x_0 \in E$ if
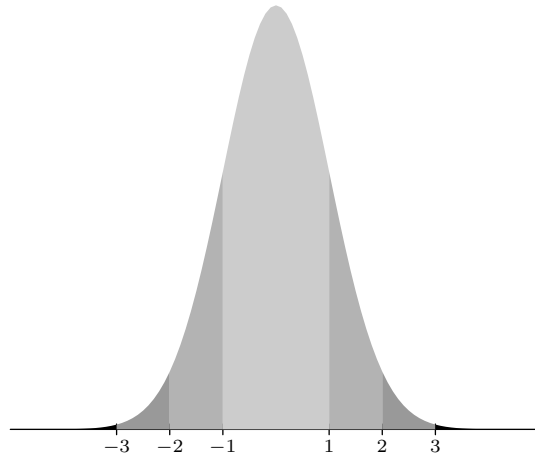
$$(0.1) \qquad \underset{U' \in \mathcal{U}(f(x_0))}{\forall} \; \underset{U \in \mathcal{U}(x_0)}{\exists} \quad f(U) \subset U'.$$

f is called continuous in E, if f is continuous at every point of E.

Normal distribution

Below is the graph of the normal distribution with *mean* $\mu = 0$ and *standard deviation* $\sigma = 1$ plotted with a $x : y$ ratio of $1 : 20$.

For the IQ distribution of a given population the mean would be $\mu = 100$ and the standard deviation $\sigma = 15$. The shifted graph would look the same, if the unit length would be defined as a standard deviation.

Graph of a smooth cut-off function