

Figure 1 shows a plot of the function $f(x) = x \sin x$ (black line) and its approximation using 10 DoE points and $p=9$ (blue line). The plot includes a legend in the top left corner. The x-axis ranges from 0 to 2π , and the y-axis ranges from -1 to 1. The approximation is very close to the function, except for a sharp spike near $x = \pi/2$. Two vertical red dotted lines indicate the locations of the DoE points at $x=0$ and $x=\pi$.

