Generating static standing waves with Gnuplot or MS Excel

A simple equation that describes a standing wave statically (the time variation is not included) is:

$$V(x) = A*sqrt[4.0* p*cos^2(beta*x) + (1-p)^2]$$

Here:

A is an arbitrary amplitude (can be unity).

p is the reflection coefficient magnitude

x is the length of the line variable

beta is the wave number $= \dfrac{2?}{?}$

This simple expression can be used as script for GNUPLOT or used in an EXCEL spreadsheet to product static standing wave patterns. These patterns are useful in visualizing reflections and impedance mismatches.

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