ringmodulation

Ring modulation for wave audio signals

Syntax

\texttt{outwave = ringmodulation(inwave, carrier\_freq, fs);}

Description

An wave input signal should be imported to the workspace prior to the function call. Please specify sampling rate (fs) during import in the following manner;

\[
\texttt{[inwave, fs] = wavread('filename');}
\]

Input variables:

- \texttt{inwave} = input signal
- \texttt{carrier\_freq} = controls rate of carrier signal
- \texttt{fs} = sampling frequency (specified via wavread)

Process

To apply ring modulation, a sinusoidal carrier signal \( m(n) \) is created and then multiplied with the input (modulator) signal \( x(n) \), to produce the output signal \( y(n) \).

\[
y(n) = x(n) \times m(n)
\]

(1.1) \[1\]

Example

Apply ring modulation to guitar signal (cleanguitar.wav);

\[
\texttt{[inwave,fs] = wavread('cleanguitar');}
\]

\[
\texttt{outwave = ringmodulation(inwave, 400, fs);}
\]

\[
\text{Figure 1 – Multiplication of Input and Carrier}
\]
References


See Also

wavread | wavwrite