Signal envelope

The function, envelope returns the upper envelope of the input sequence, as the magnitude. If x is a matrix, then the envelope operates independently over each and every column of x. In this example, we generate the test signal as a suppressed cosine.

$Dt := \text{curve2d}(x, -10, 10, 10001)$ Time axis

$dt := \text{col2vec}(Dt, 0)$

$a := 0.2$ Damping factor

$signal1 := -0.75 + \text{mul}\left(\sin(\pi \cdot 2\ dt), \exp(-a\ dt)\right)$ Dumped sinusoidal with DC bias

$gs := \text{join mat cols}(dt, signal1)$ Graph of the signal

$genv := \text{join mat cols}\left(dt, \text{envelopetop}(signal1)\right)$ Graph of the top envelope of signal

$gloenv := \text{join mat cols}\left(dt, \text{envelopebottom}(signal1)\right)$ Graph of the low envelope