

ORIGIN = 0 ori := ORIGIN

g := 9810

realdata :=

	0	1	2
0	10	$4.453 \cdot 10^3 - 46.639i$	
1	11	...	

freqv := realdata^{<0>}

Nrow := rows(freqv) - 1

Nrow = 1990

nf := last(freqv)

nf = 1990

predicteddata :=

	0	1
0	10	$01 - 3.282i \cdot 10^{-7}$
1	11	...

▼ Data extraction

ir := 0..nf ic := 1

for the plot, calculate magnitude

$$\text{real_magdata}_{ir, ic} := \frac{|\text{realdata}_{ir, ic}|}{g}$$

$$\text{predicted_magdata}_{ir, ic} := |\text{predicteddata}_{ir, ic}|$$

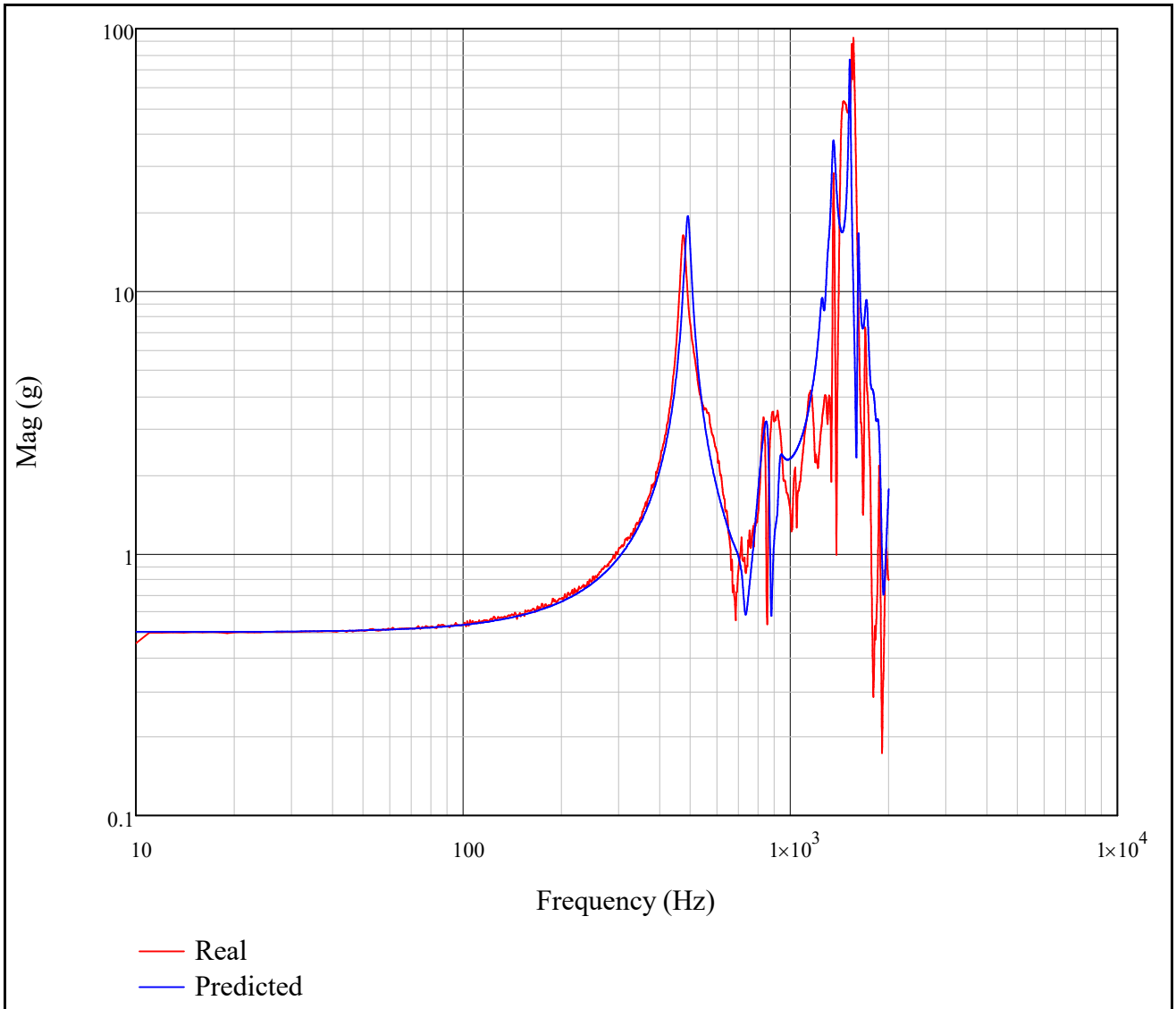
$$\text{predicted_magdata}^{\langle 0 \rangle} := \text{predicteddata}^{\langle 0 \rangle}$$

▲ Data extraction

idx := 1

dataplot_mag_real := real_magdata^{<idx>}

dataplot_mag_predicted := predicted_magdata^{<idx>}



FRAC

extract data between frequencies of interest

f1 := 10

f2 := 2000

ranks of specified frequencies

rkf11 := match(f1, freqv)_{ori}

rkf11 = 0

freqv_{rkf11} = 10

rkf12 := match(f2, freqv)_{ori}

rkf12 = 1990

freqv_{rkf12} = 2000

rkf21 := match(f1, freqv)_{ori}

rkf21 = 0

freqv_{rkf21} = 10

rkf22 := match(f2, freqv)_{ori}

rkf22 = 1990

freqv_{rkf22} = 2000

Extract the vectors between the 2 ranks

lastcol := cols(real_magdata) - 1

lastcol = 1

freqv_frac := submatrix(freqv, rkf11, rkf12, ori, ori)

RealData_ReIm_frac := submatrix(realdata, rkf11, rkf12, ori + 1, lastcol)

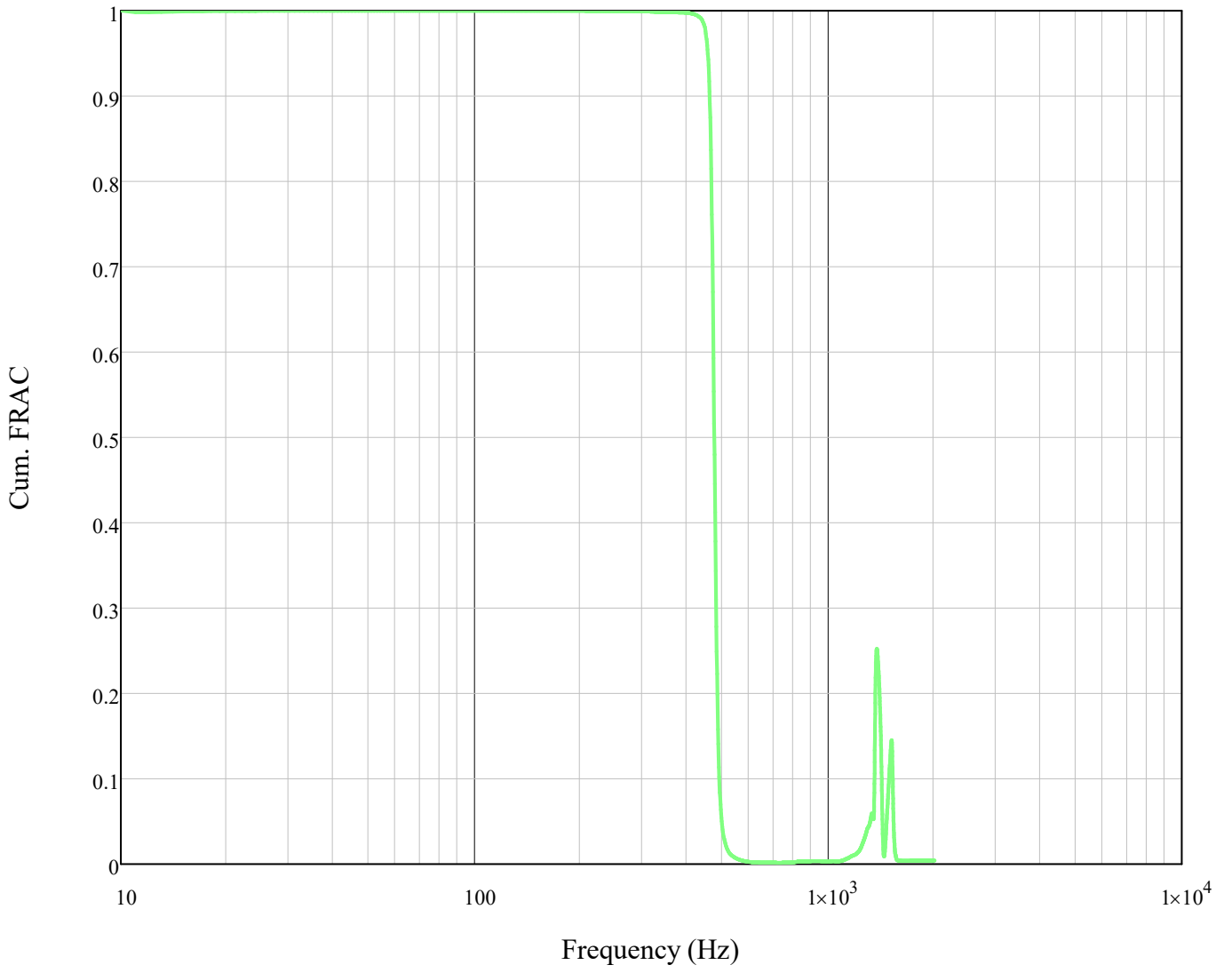
PredictedData_ReIm_frac := submatrix(predicteddata, rkf21, rkf12, ori + 1, lastcol)

FRAC(xHv, aHv) :=	<pre>"calculate FRAC value for range w1 to w2" ir ← last(xHv) ic ← ori FRAC_{ir, ic} ← 0 for r ∈ ori..ir xH ← submatrix(xHv, ori, r, ori, ori) aH ← submatrix(aHv, ori, r, ori, ori) FRAC_r ← $\frac{(xH^T \cdot aH)^2}{(xH ^2 \cdot aH ^2)}$ return FRAC</pre>
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Calculate the FRAC by iterating from f1 to f2

FRAC_sum := FRAC(RealData_ReIm_frac, PredictedData_ReIm_frac)

Cum. FRAC



frac

