

ori := ORIGIN

a dummy vector

Create a freq range

$$\text{fstart} := 50 \quad \text{fend} := 1000 \quad \text{fstep} := 1 \quad \text{finc} := \frac{\text{fend} - \text{fstart}}{\text{fstep}} \quad \text{finc} = 950$$

$$i := \text{ori}.. \text{finc} \quad \text{freqv}_i := i \cdot \text{fstep} + \text{fstart}$$

xv :=

	0	1
0	0.613-3.647i·10 <sup>-3</sup>	
1	...	

The **MMIF** is given as a frequency dependent eigenvalue problem:

$$\lambda ([A] + [B]) \{F(\omega)\} = [A] \{F(\omega)\}$$

where:

$$[A] = [H_R(\omega)]^T [M] [H_R(\omega)];$$

$$[B] = [H_I(\omega)]^T [M] [H_I(\omega)];$$

$H_R(\omega)$  is the real part of the FRF;

$H_I(\omega)$  is the imaginary part of the FRF;

$\{F(\omega)\}$  is the force eigenvector;

$[M]$  is the mass matrix;

$\lambda$  is an eigenvalue.

The MMIF comprises the eigenvalues resulting from the solution of the eigenvalue problem for each frequency f.

$n := 0 \dots \text{rows}(xv) - 1$        $m := 0 \dots \text{rows}(xv) - 1$        $M_{n,m} := 1$

$A := \text{Re}(xv)^T \cdot M \cdot \text{Re}(xv)$      $B := \text{Im}(xv)^T \cdot M \cdot \text{Im}(xv)$       A & B are scalar so does not work !!

$$\text{eigenvals}\left(\frac{A}{A + B}\right) = ■$$

