## Debug Matrices / M debug

```
[[0.01+0.j -0.01+0.j 0. +0.j 0. +0.j 0. +0.j 0. +0.j 0. +0.j 0. +0.j 0]
                +0.j]
                                                                                        +0.j
   [ 0.09+0.i
                               0.01+0.i -0.1 +0.i
                                                                               0.
                                                                                                       0.
                                                                                                                +0.j 1.
                                                                                                                                        +0.j 0.
                                                                                                                                                                 +0.i
       0. +0.j]
               +0.j
                              0. +0.j \ 0. +0.j
                                                                               0.
                                                                                         +0.j
                                                                                                       0.
                                                                                                                +0.j
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                                                                                                                                         +0.j 1.5 +0.j
       0. + 0.j
   [-0.1 +0.j
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                                                      0.1 + 0.j
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      -1.
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                +0.j]]
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[0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j]
   [0.+0.j \ 0.+0.j \ 0.+0.j]
   [0.+0.\hat{j} \ 0.+0.\hat{j} \ 0.+
  [0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j 0.+0.j [0.+0.j 0.+0.j 0.+0.j
   [0.+0.j \ 0.+0.j \ 0.
   [0.+0.j \ 0.+0.j \ 0]
[[ 0.
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                                             +0.j 0.
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       0.
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                   +0.j
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       0.
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                                 0.
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                                                                                                                             +0.i 0.
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                                0.
       0.
                   +0.j
                                             +0.j]]
RHS = [0.
                            +0.j
                                          0. +0.j -0.02+0.j 0. +0.j 0.02+0.j 0. +0.j 10.
    0. + 0.j
Unknowns:
['V1', 'V2', 'V3', 'V4', 'V5', 'L1 I', 'V1 I', 'E1 I']
M_debug at f=1000.0 Hz:
[[0.01+0.j]
                                       -0.01+0.j
                                                                           0.
                                                                                   +0.j
                                                                                                             0.
                                                                                                                   +0.j
                                                                                                                                                       +0.j
                                                                                   +0.j
       0. + 0.j
                                        0. + 0.j
                                                                                                       1
                                                                           1.
   [0.09+0.\bar{j}]
                                         0.01+0.0063j
                                                                        -0.1 + 0.j
                                                                                                                      +0.j
                                                                                                                                                       +0.j
       1. +0.j
                                                                          0. + 0.j
                                         0. + 0.j
                                                                                                       ]
                                                +0.j
   [ 0.
                                                                                                                                                       +0.j
                                                                                                             0.
               +0.j
                                         0.
                                                                           0.
                                                                                   +0.j
                                                                                                                     +0.j
                +0.j
                                         1.5 + 0.j
                                                                           0.
                                                                                    +0.j
                                                                                                       ]
                                                +0.j
                                                                          0.1 + 0.j
                                                                                                                   +0.j
                                                                                                                                                       +0.j
   [-0.1 + 0.j]
                                                                                                            0.
                                         0.
                                                                                                                                              0.
                +0.j
                                       -0.5 +0.j
                                                                                    +0.j
       0.
                                                                           0.
                                                                                                        ]
   [ 0.
                +0.j
                                        0. +0.j
                                                                                   +0.j
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                                                                                                             0.
                                                                                                                      +0.j
                +0.j
                                                  +0.j
       0.
                                         0.
                                                                         -1.
                                                                                   +0.j
                                                                                                        ]
   [ 0.
                +0.j
                                         1.
                                                  +0.j
                                                                          0.
                                                                                    +0.j
                                                                                                                      +0.j
                                                                                                                                                       +0.j
                -6.2832j
                                                  +0.j
                                                                                    +0.j
       0.
                                        Θ.
                                                                           Θ.
                                                                                                       ]
   [ 0.
                +0.j
                                                  +0.j
                                                                                    +0.j
                                         0.
                                                                           0.
                                                                                                            1.
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       Θ.
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                +0.j
                                                  +0.j
                                                                                   +0.j
                                                                                                             2.
   [ 1.
                                       -2.
                                                                           0.
                                                                                                                   +0.j
                                                                                                                                            -1. +0.j
                +0.j
                                        0.
                                                  +0.j
                                                                          0.
                                                                                    +0.j
                                                                                                       ]]
```

## FLOPs & Timing

```
Frequency(Hz), FLOPs
1, 4.6933e+02
1.021, 4.6933e+02
1.042, 4.6933e+02
1.087, 4.6933e+02
1.109, 4.6933e+02
1.133, 4.6933e+02
1.156, 4.6933e+02
1.156, 4.6933e+02
1.181, 4.6933e+02
1.205, 4.6933e+02
1.00 (omitted many)

TOTAL SWEEP FLOPs = 4.6933e+05
TOTAL TIME (sec) = 2.56
```

## Final Summary

AC Simulation completed Frequency Points = 1000 Total Time = 2.56 s Total FLOPs = 4.6933e+05