When partition is based on inductance, **with G, C matrix 460x460 (280 voltage nodes, 180 current node),** the reduced model by TBS performs better than model partitioned by resistive coupling at low frequency. The result is shown in Figure1.

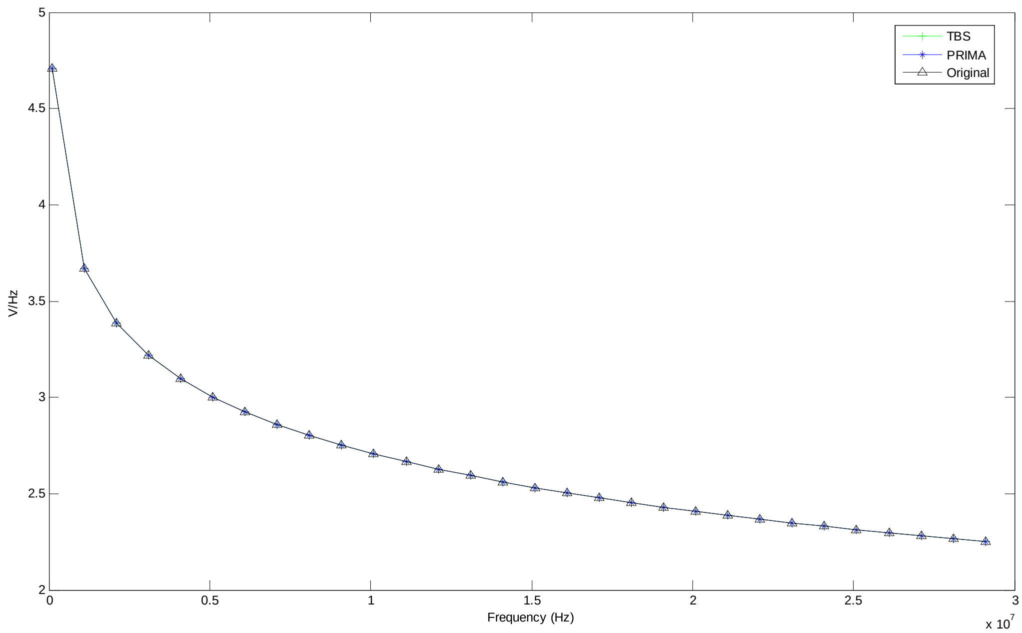

Figure.1 TBS q=8,PRIMA q=16, operating frequency from 1e5~3e7 Hz
Runtime: TBS1.933s PRIMA 2.764s
Reduced size TBS 56x56 PRIMA 16*16

For high frequency, TBS performs better than PRIMA when qs are the same. This result is roughly the same when partition is based on the resistive coupling. The trade-off for TBS is that the reduced size is much bigger than PRIMA.   The simulation results are shown in Figure2

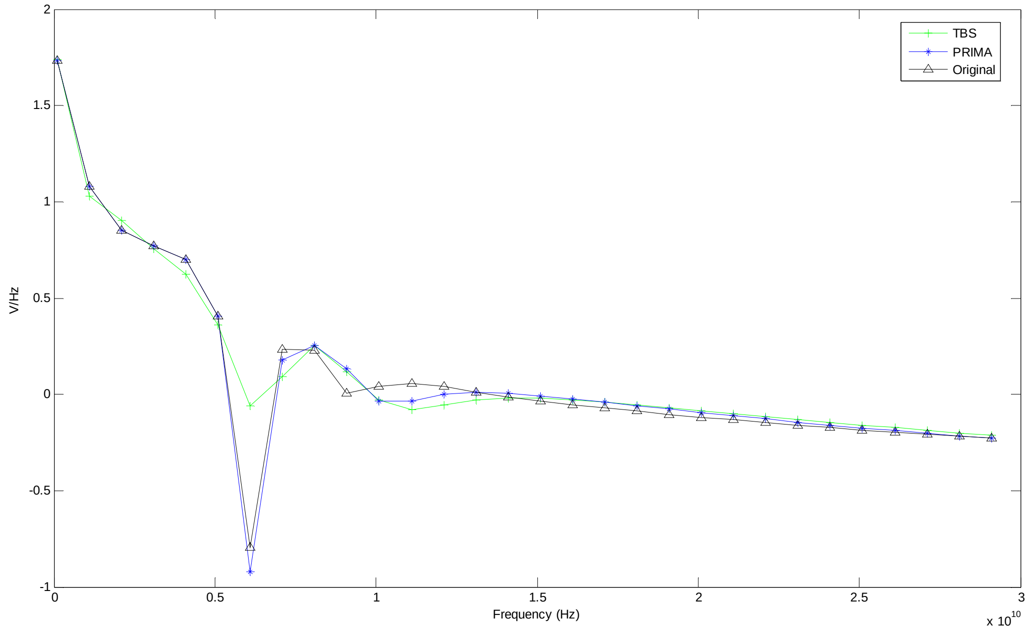

Figure. 2(a) TBS q=24,PRIMA q=32, operating frequency from 1e8~3e10 Hz
Runtime: TBS 2.974s PRIMA 3.115s
Reduced size TBS 140*140 PRIMA 32*32

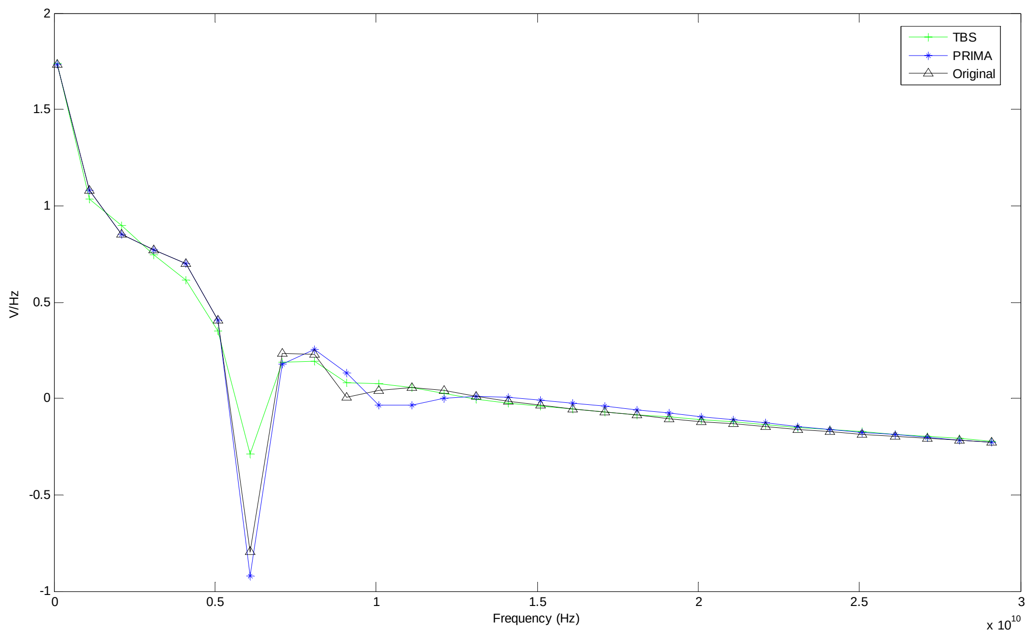

Figure2(b) TBS q=28,PRIMA q=32, operating frequency from 1e8~3e10 Hz
Runtime: TBS 3.345s PRIMA 3.18s
Reduced size TBS 160*160 PRIMA 32*32

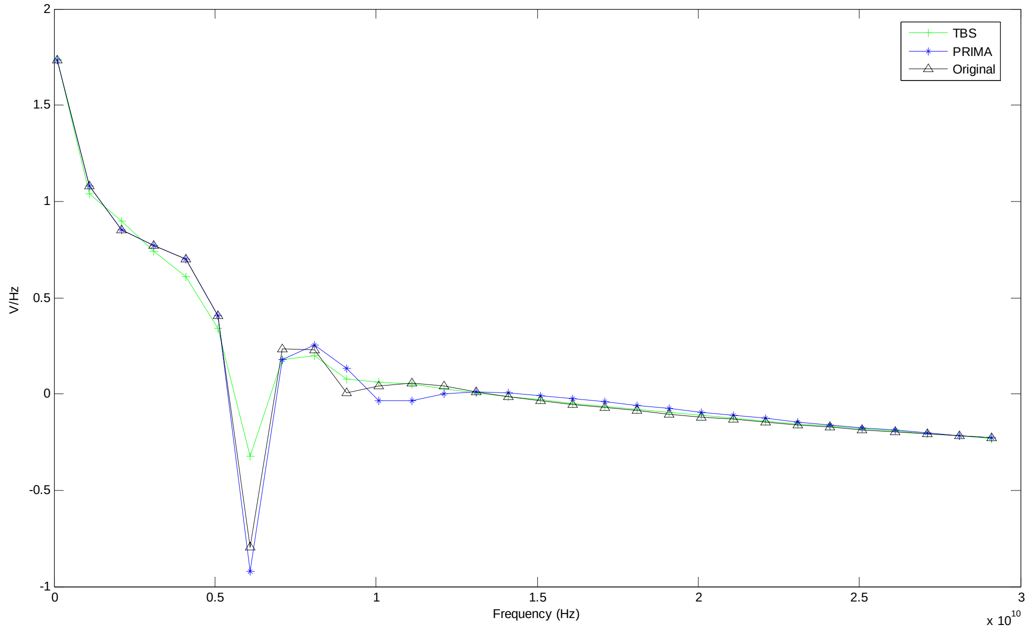

Figure2(c) TBS q=32,PRIMA q=32, operating frequency from 1e8~3e10 Hz
Runtime: TBS 3.865s PRIMA 3.115s
Reduced size TBS 180*180 PRIMA 32*32

With G, C matrix 672x672 (408 voltage nodes, 264 current node) at high frequency, the results are shown as follows in Figure.3

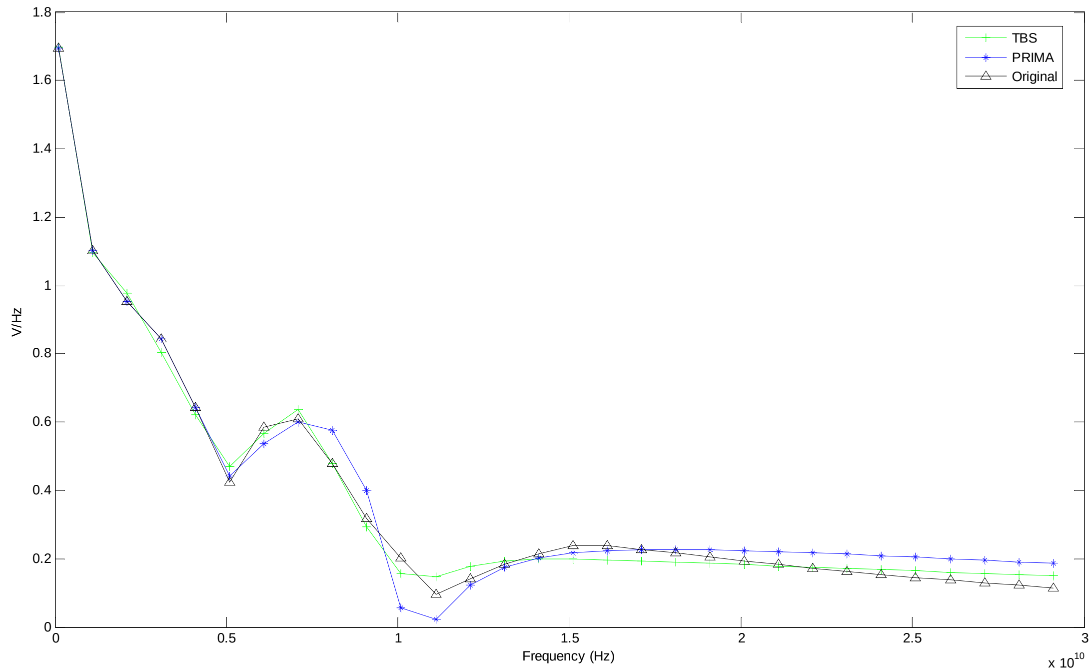

Figure3(a) TBS q=24 PRIMA q=32, operating frequency from 1e8~3e10 Hz
Runtime: TBS 7.45s PRIMA 7.90.115s
Reduced size TBS 144*144 PRIMA 32*32

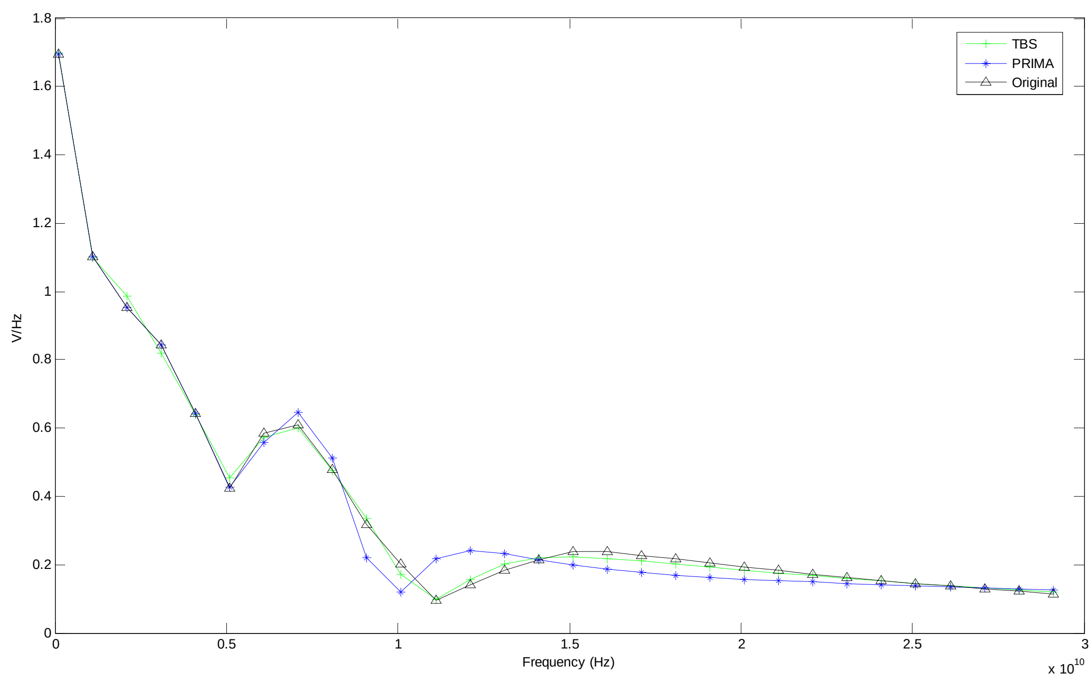

Figure3(b) TBS q=30 PRIMA q=40, operating frequency from 1e8~3e10 Hz
Runtime: TBS 9.534s PRIMA 10.569s
Reduced size TBS 174*174 PRIMA 32*32

Currently, I partition the whole circuits into four blocks with roughly the same size. That’s probably the reason that the TBS is not good as expected (match mq moments) because the pole distributions for each block may be similar before clustering. Therefore, partitioning blocks with very different size plus clustering may improve the TBS performance.