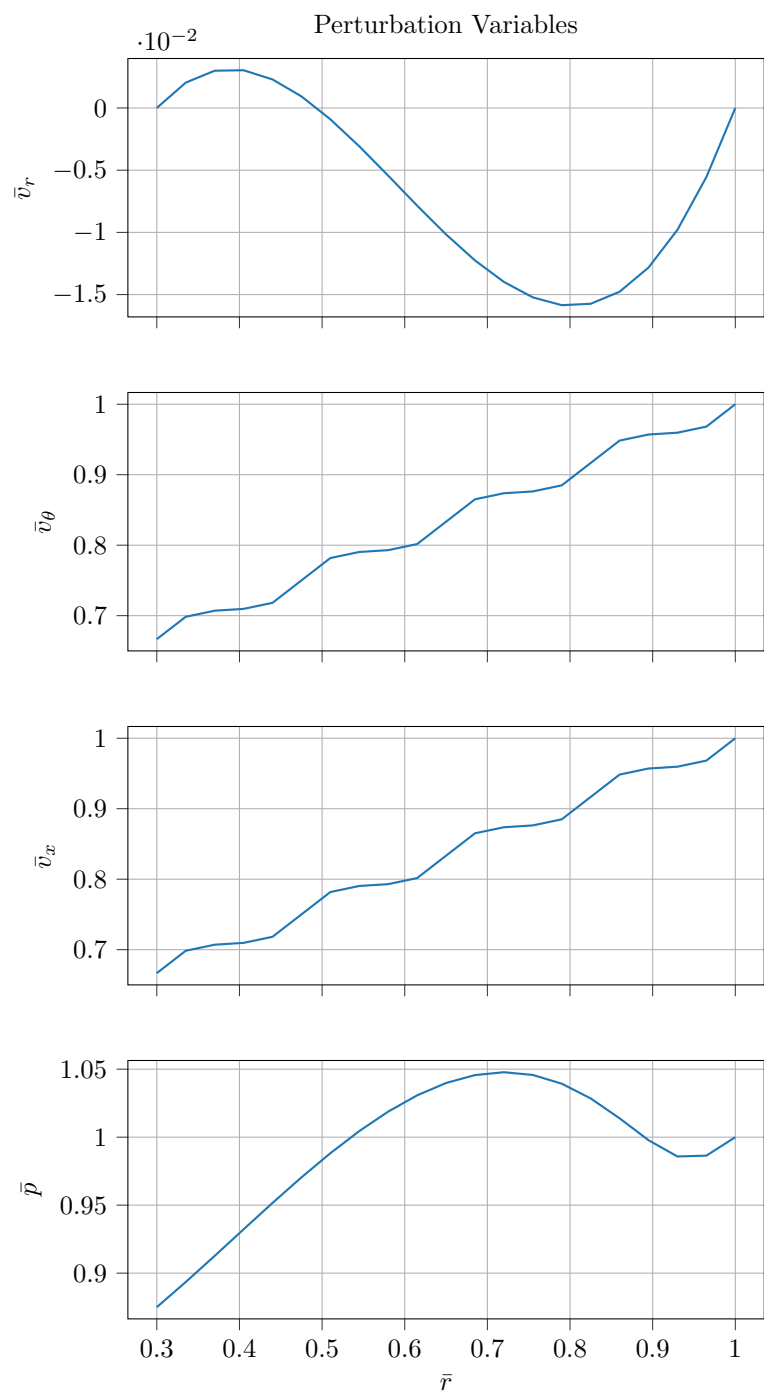


Figure 1: Mach distribution for method of manufactured solution case

1 Results

REAL IMAG									
132.45163135362651	0.0000000000000000								
122.43576389117432	0.0000000000000000								
122.34450419968586	0.0000000000000000								
122.36772555548241	0.0000000000000000								
122.38391865750972	0.0000000000000000								
122.39372958394780	0.0000000000000000								
122.39827321142887	0.0000000000000000								
122.39840825635778	0.0000000000000000								
122.39397598289989	0.0000000000000000								
122.26217572814555	0.0000000000000000								
113.63723037295571	0.0000000000000000								
106.14582857355705	0.0000000000000000								
106.03962929251533	0.0000000000000000								
106.02527834465930	0.0000000000000000								
106.01014737595943	0.0000000000000000								
105.99376162151984	0.0000000000000000								
105.97624884854034	0.0000000000000000								
105.95771859082710	0.0000000000000000								
105.93764116006238	0.0000000000000000								
105.82357855219932	0.0000000000000000								
99.278429398464695	0.0000000000000000								
#	j	Re{gam}	Im{gam}	Re{gam}/k	Im{gam}/k	kappa			
1	-0.413625380697E+02	-0.445557345680E+01	-0.137875126899E+01	-0.148519115227E+00	-0.716974496085E+00	0.772325075550E-01			
2	-0.368543850968E+02	-0.907765124549E-04	-0.122847950323E+01	-0.302588374850E-05	-0.814014395330E+00	0.200500938225E-05			
3	-0.410609869384E+02	0.893929136549E-01	-0.136869956461E+01	0.297976378850E-02	-0.730617066165E+00	-0.159060931508E-02			
4	-0.409179157657E+02	-0.182993550805E+00	-0.136393052552E+01	-0.609978502684E-02	-0.733160510023E+00	0.327884845864E-02			
5	-0.398233007529E+02	0.129985845275E-02	-0.132744335843E+01	0.433286150918E-04	-0.753327810626E+00	-0.245891099890E-04			
6	-0.388970982530E+02	-0.103039846710E+00	-0.129656994177E+01	-0.343466155700E-02	-0.771260346581E+00	0.204309708062E-02			
7	-0.388989792043E+02	0.101102062135E+00	-0.129663264014E+01	0.337006873783E-02	-0.771223254607E+00	-0.200448091446E-02			
8	0.215234419152E+02	0.100926800293E+01	0.717448063839E+00	0.336422667642E-01	0.139077106075E+01	-0.652154398233E-01			
9	0.238271901517E+02	0.462435695669E-02	0.794239671724E+00	0.154145231890E-03	0.125906574292E+01	-0.244358205484E-03			
10	0.236791559644E+02	-0.389784729957E-02	0.789305198812E+00	-0.129928243319E-03	0.126693701550E+01	0.208551649055E-03			
11	0.225616501041E+02	0.334130168790E+00	0.752055003470E+00	0.111376722930E-01	0.132939840532E+01	-0.196879267034E-01			
12	0.230137784832E+02	0.456067320398E-01	0.767125949439E+00	0.151689106799E-02	0.130356180854E+01	-0.257762270380E-02			
13	0.228949672534E+02	0.767863116381E-01	0.763165575113E+00	0.255954372127E-02	0.131031690163E+01	-0.439460781225E-02			
14	0.224410660172E+02	-0.211028052878E+00	0.748035533906E+00	-0.703426842926E-02	0.133671668492E+01	0.125700231465E-01			



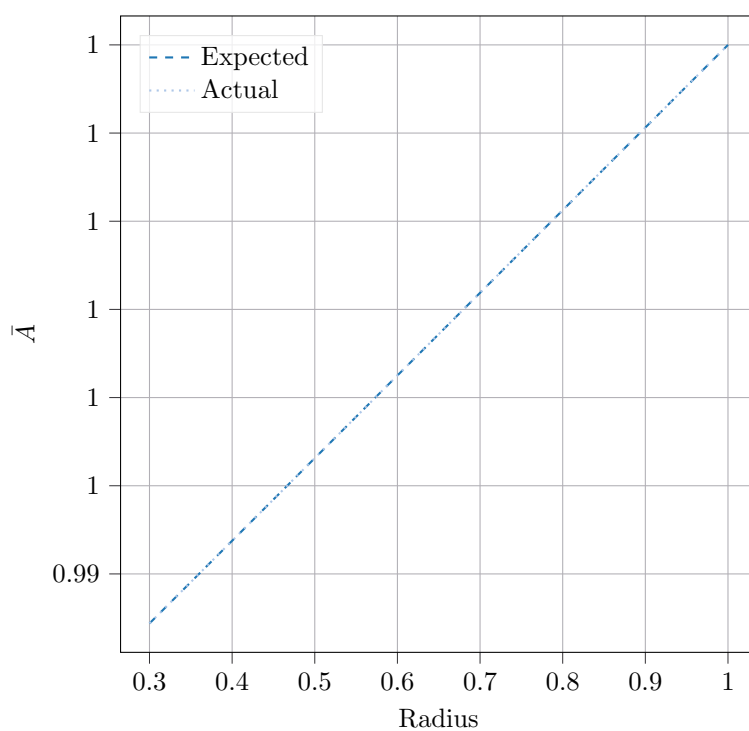


Figure 2: Speed of Sound from Integrating the Tangential Mach Number

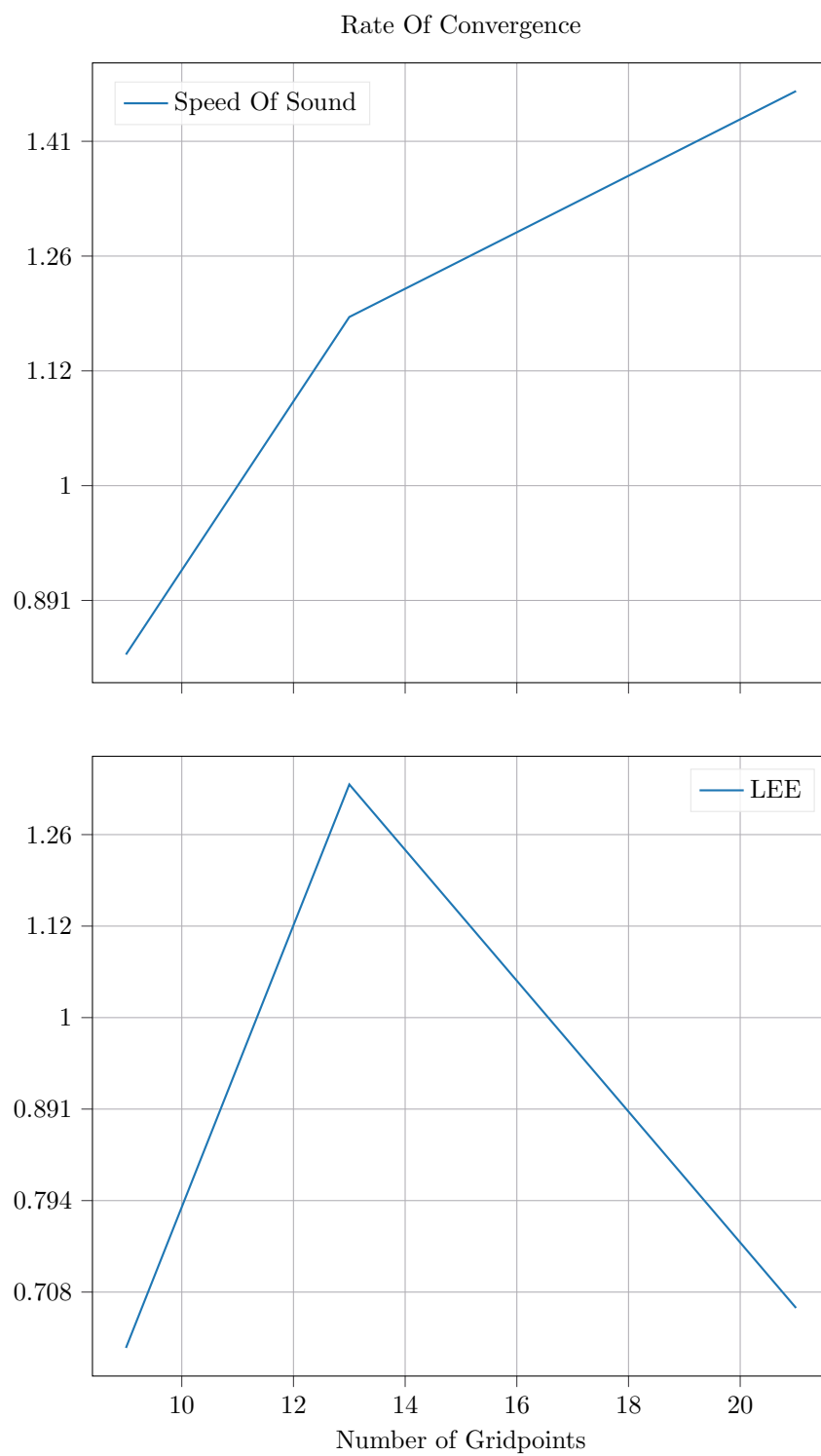


Figure 3: Rate of Convergence for the Speed of Sound Integration

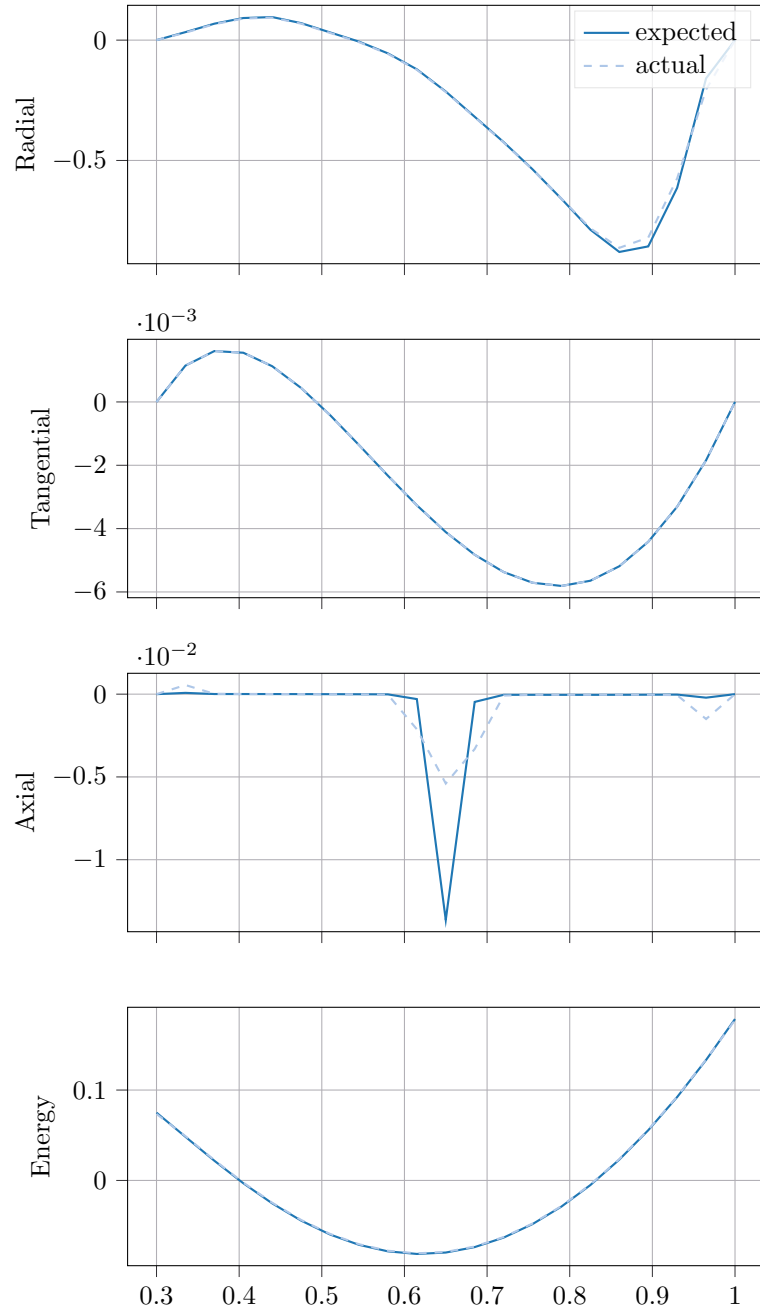
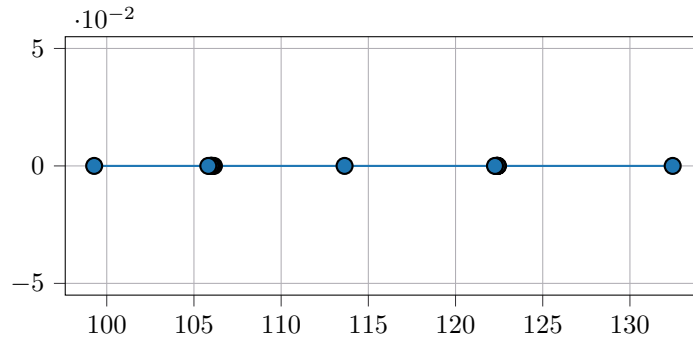


Figure 4: Source Term Error



```

15  0.992784293985E+02  0.000000000000E+00  0.330928097995E+01  0.000000000000E+00  0.302180445257E+00  0.000000000000E+00
16  0.104523070174E+03  0.899017863365E-06  0.348410233912E+01  0.299672621122E-07  0.287017975554E+00  -0.246868262386E-08
17  0.104508001033E+03  -0.456994380169E-06  0.348360003444E+01  -0.152331460056E-07  0.287059361039E+00  0.125525809960E-08
18  0.107355855625E+03  -0.171970832432E-05  0.357852852084E+01  -0.573236108108E-07  0.279444468355E+00  0.447635553383E-08
19  0.107548069747E+03  0.000000000000E+00  0.358493565822E+01  0.000000000000E+00  0.278945034259E+00  0.000000000000E+00
20  0.111867288290E+03  0.000000000000E+00  0.372890960968E+01  0.000000000000E+00  0.268174910275E+00  0.000000000000E+00
21  0.115407757705E+03  0.000000000000E+00  0.384692525685E+01  0.000000000000E+00  0.259947863094E+00  0.000000000000E+00
22  0.124502973806E+03  0.000000000000E+00  0.415009912688E+01  0.000000000000E+00  0.240958099897E+00  0.000000000000E+00
23  0.124780808439E+03  0.000000000000E+00  0.415936028129E+01  0.000000000000E+00  0.240421587064E+00  0.000000000000E+00
24  0.120283721059E+03  0.000000000000E+00  0.400945736863E+01  0.000000000000E+00  0.249410308693E+00  0.000000000000E+00
25  0.120014355081E+03  0.000000000000E+00  0.400047850269E+01  0.000000000000E+00  0.249970097159E+00  0.000000000000E+00
26  0.132451628167E+03  0.000000000000E+00  0.441505427222E+01  0.000000000000E+00  0.226497781985E+00  0.000000000000E+00
27  0.000000000000E+00  0.000000000000E+00  0.000000000000E+00  0.000000000000E+00  0.000000000000E+00  0.000000000000E+00
28  0.000000000000E+00  0.000000000000E+00  0.000000000000E+00  0.000000000000E+00  0.000000000000E+00  0.000000000000E+00

```