

CAA for flow/acoustic interaction and high speed flows with shocks

Sergio Pirozzoli

Dipartimento di Meccanica e Aeronautica
Università di Roma 'La Sapienza'
Via Eudossiana 18, 00184 Roma (Italy)

Contents

1	Introduction	3
2	Shock-capturing schemes	5
2.1	TVD schemes	6
2.2	WENO schemes	7
2.3	Time integration	9
3	Smooth solutions	10
3.1	Performance of linear schemes	10
3.2	Performance of shock-capturing schemes	11
3.2.1	ADR of shock-capturing schemes	12
3.2.2	Efficiency analysis	13
4	Discontinuous solutions	14
5	Improving shock-capturing schemes	16
5.1	Optimized schemes	16
5.2	Hybrid schemes	17
5.3	Compact nonlinear schemes	18
5.4	Performance of CAA-tailored schemes	18
6	Euler equations	19
6.1	Performance for Shu-Osher test case	21
7	Concluding remarks	21