Empiricism Name Aim Unsteady Re-dependence 3/2D Grid Ready Steps $10^{3.5}$ 10^{5} 2DURANS Numerical Yes Weak No Strong 1980 Weak 10^{7} 10^{3} 1990 3DRANS Numerical No No Strong $10^{3.5}$ 10^{7} 3DURANS Yes Weak No 1995 Numerical Strong 10^{4} DES Hybrid Yes Weak 10^{8} 2000 Yes Strong $10^{11.5}$ $10^{6.7}$ LES Weak Weak 2045 Hybrid Yes Yes 10^{15} $10^{7.3}$ ODNS Physical Yes Yes Weak 2070 Strong

Strong

Yes

None

Yes

Numerical

 10^{16}

 $10^{7.7}$

2080

Summary of strategies

DNS