# Benchmark OptimalControl Results

**max iter = 1000, tol = 1.0e-8, constr viol tol = 1.0e-6, solver = ma57**

| Model | Discretization | Variables | Constraints | Iterations | Total Time | Ipopt Time | Objective Value | Flag |
|---|---|---|---|---|---|---|---|---|
| cart_pendulum | 100 | 507 | 405 | 237 | 8.4 | 2.6 | 1.74413 | Solve Succeeded |
| cart_pendulum | 500 | 2507 | 2005 | 495 | 13.4 | 12.8 | 1.74373 | Solve Succeeded |
| robot | 100 | 910 | 612 | 75 | 1.8 | 0.5 | 9.14269 | Solve Succeeded |
| robot | 500 | 4510 | 3012 | 649 | 24.5 | 23.4 | 9.14099 | Solve Succeeded |
| electrical_vehicle | 100 | 404 | 305 | 16 | 2.3 | 0.3 | 1.22905e6 | Solve Succeeded |
| electrical_vehicle | 500 | 2004 | 1505 | 1000 | 20.5 | 19.8 | 231779.0 | Iterations Exceeded |
| double_oscillator | 100 | 606 | 503 | 5 | 3.7 | 1.5 | 0.000908244 | Solve Succeeded |
| double_oscillator | 500 | 3006 | 2503 | 5 | 0.3 | 0.1 | 0.000910921 | Solve Succeeded |
| ducted_fan | 100 | 910 | 713 | 162 | 6.6 | 4.5 | 1832.95 | Solve Succeeded |
| ducted_fan | 500 | 4510 | 3513 | 163 | 149.6 | 148.8 | 1831.66 | Solve Succeeded |
| steering | 100 | 506 | 408 | 11 | 1.3 | 0.2 | 0.554595 | Solve Succeeded |
| steering | 500 | 2506 | 2008 | 17 | 2.5 | 0.3 | 0.554572 | Solve Succeeded |
| rocket | 100 | 405 | 304 | 21 | 1.3 | 1.3 | 1.01283 | Solve Succeeded |
| rocket | 500 | 2005 | 1504 | 77 | 7.5 | 7.2 | 1.01284 | Solve Succeeded |
| chain | 100 | 404 | 305 | 7 | 0.6 | 0.0 | 5.06978 | Solve Succeeded |
| chain | 500 | 2004 | 1505 | 14 | 0.3 | 0.2 | 5.06858 | Solve Succeeded |
| dielectrophoretic_particle | 100 | 304 | 203 | 38 | 1.0 | 0.2 | -9.97699e-9 | Infeasible Problem |
| dielectrophoretic_particle | 500 | 1504 | 1003 | 38 | 2.0 | 1.9 | -9.99545e-9 | Infeasible Problem |
| truck | NaN | NaN | NaN | NaN | NaN | NaN | NaN | NaN |
| quadrotorp2p | NaN | NaN | NaN | NaN | NaN | NaN | NaN | NaN |
| moonlander | NaN | NaN | NaN | NaN | NaN | NaN | NaN | NaN |
| glider | NaN | NaN | NaN | NaN | NaN | NaN | NaN | NaN |
| space_shuttle | NaN | NaN | NaN | NaN | NaN | NaN | NaN | NaN |