max iter = 1000, tol = 1.0e-8, constr viol tol = 1.0e-6, solver = ma57Model Discretization Variables Iterations Total Time Ipopt Time Objective Value Flag Constraints cart pendulum 100 507 405 16 0.54 0.53 1.88011e-11 Infeasible Problem 2507 2005 34 121.94 121.92 4 42608e-8 Infeasible Problem cart pendulum

18

21

5

5

59

67

11

17

19

59

39

39

NaN

NaN

NaN

NaN

NaN

NaN

1.0

0.32

0.09

0.01

0.0

0.01

1.1

21.01

0.45

0.11

0.03

0.42

0.01

0.03

0.03

2.82

NaN

NaN

NaN

NaN

NaN

NaN

0.99

0.28

0.0

0.01

0.0

0.01

1.0

20.96

0.45

0.1

0.03

0.41

0.01

0.03

0.03

2.82

NaN

NaN

NaN

NaN

NaN

NaN

9 14269

9.14099

1 24629e8

6.16023e8

0.014816

0.0728525

1911.53

1909 53

0.554595

0.554572

1.01283

1.01284

5.06978

5.06858

-9.97699e-9

-9.99545e-9

NaN

NaN

NaN

NaN

NaN

NaN

Benchmark JuMP Results

500 100

500

100

500

100

500

100

500

100

500

100

500

100

500

100

500

NaN

NaN

NaN

NaN

NaN

NaN

910

4510

303

1503

505

2505

809

4009

506

2506

405

2005

404

2004

304

1504

NaN

NaN

NaN

NaN

NaN

NaN

612

3012

204

1004

402

2002

612

3012

408

2008

304

1504

305

1505

203

1003

NaN

NaN

NaN

NaN

NaN

NaN

robot

robot

electrical vehicle

electrical vehicle

double oscillator

double oscillator

ducted_fan

ducted_fan

steering

steering

rocket

rocket

chain

chain

dielectrophoretic_particle

dielectrophoretic_particle

truck

quadrotorp2p

quadrotor1obs

moonlander

glider

space_shuttle

Solve Succeeded Solve Succeeded Solve Succeeded Solve Succeeded Solve Succeeded Solve Succeeded Solve Succeeded

Solve Succeeded

Solve Succeeded

Solve Succeeded

Solve Succeeded

Solve Succeeded

Solve Succeeded

Solve Succeeded

Infeasible Problem

Infeasible Problem

NaN

NaN

NaN

NaN

NaN

NaN