

# Benchmark Callbacks of rocket model with JuMP and OptimalControl

| Solver         | Discretization | nnz Hessian | nnz Jacobian | Time Obj(ms) | Time Grad(ms) | Time Cons(ms) | Time Jac(ms) | Time Hess(ms) |
|----------------|----------------|-------------|--------------|--------------|---------------|---------------|--------------|---------------|
| JuMP           | 100            | 4900        | 1904         | 0.0          | 0.0           | 0.0           | 0.04         | 0.13          |
| JuMP           | 500            | 24500       | 9504         | 0.0          | 0.0           | 0.03          | 0.19         | 1.04          |
| OptimalControl | 100            | 1111        | 1904         | 0.0          | 0.0           | 0.08          | 0.71         | 0.39          |
| OptimalControl | 500            | 5511        | 9504         | 0.0          | 0.0           | 0.37          | 3.45         | 2.31          |