

```
In[62]:= Needs["IdentifiabilityAnalysis`"]
        startTime = AbsoluteTime[]
```

```
Out[63]:= 3.6877993648789118 × 109
```

```
In[64]:= vars = {x1, x2, x3, x4}
```

```
Out[64]:= {x1, x2, x3, x4}
```

```
In[65]:= params = {k01, k12, k13, k14, k21, k31, k41}
```

```
Out[65]:= {k01, k12, k13, k14, k21, k31, k41}
```

```
In[66]:= sys = {x1'[t] ==
    - (k21 + k31 + k41 + k01) * x1[t] + k12 * x2[t] + k13 * x3[t] + k14 * x4[t] + u1[t],
    x2'[t] == k21 * x1[t] - k12 * x2[t],
    x3'[t] == k31 * x1[t] - k13 * x3[t],
    x4'[t] == k41 * x1[t] - k14 * x4[t],
    x1[0] == 0, x2[0] == 0, x3[0] == 0, x4[0] == 0}
```

```
Out[66]:= {x1'[t] == u1[t] + (-k01 - k21 - k31 - k41) x1[t] + k12 x2[t] + k13 x3[t] + k14 x4[t],
    x2'[t] == k21 x1[t] - k12 x2[t], x3'[t] == k31 x1[t] - k13 x3[t],
    x4'[t] == k41 x1[t] - k14 x4[t], x1[0] == 0, x2[0] == 0, x3[0] == 0, x4[0] == 0}
```

```
In[67]:= output = {x1[t]}
```

```
Out[67]:= {x1[t]}
```

```
In[68]:= iad = IdentifiabilityAnalysis[{sys, output}, vars, params, t, {u1}]
```

```
Out[68]:= IdentifiabilityAnalysisData[True, <>]
```

```
In[69]:= iad["IdentifiableQ"]
```

```
Out[69]:= True
```

```
In[70]:= iad["DegreesOfFreedom"]
```

```
Out[70]:= 0
```

```
In[71]:= iad["NonIdentifiableParameters"]
```

```
Out[71]:= {}
```

```
In[72]:= endTime = AbsoluteTime[]
        N[endTime - startTime]
```

```
Out[72]:= 3.6877993653688264 × 109
```

```
Out[73]:= 0.489915
```