

```
In[1]:= Needs["IdentifiabilityAnalysis`"]
        startTime = AbsoluteTime[]
```

```
Out[2]= 3.6879518348563880 × 109
```

```
In[3]:= vars = {x1, x2, x3, x4}
```

```
Out[3]= {x1, x2, x3, x4}
```

```
In[4]:= params = {k03, k04, k13, k24, k31, k42, k43}
```

```
Out[4]= {k03, k04, k13, k24, k31, k42, k43}
```

```
In[5]:= sys = {x1'[t] == -k31 * x1[t] + k13 * x3[t] + u1[t],
               x2'[t] == -k42 * x2[t] + k24 * x4[t],
               x3'[t] == k31 * x1[t] - (k03 + k13 + k43) * x3[t],
               x4'[t] == k42 * x2[t] + k43 * x3[t] - (k04 + k24) * x4[t],
               x1[0] == 0, x2[0] == 0, x3[0] == 0, x4[0] == 0}
```

```
Out[5]= {x1'[t] == u1[t] - k31 x1[t] + k13 x3[t],
          x2'[t] == -k42 x2[t] + k24 x4[t], x3'[t] == k31 x1[t] - (k03 + k13 + k43) x3[t],
          x4'[t] == k42 x2[t] + k43 x3[t] - (k04 + k24) x4[t],
          x1[0] == 0, x2[0] == 0, x3[0] == 0, x4[0] == 0}
```

```
In[6]:= output = {x1[t], x2[t]}
```

```
Out[6]= {x1[t], x2[t]}
```

```
In[7]:= iad = IdentifiabilityAnalysis[{sys, output}, vars, params, t, {u1}]
```

```
Out[7]= IdentifiabilityAnalysisData[False, <>]
```

```
In[8]:= iad["IdentifiableQ"]
```

```
Out[8]= False
```

```
In[9]:= iad["DegreesOfFreedom"]
```

```
Out[9]= 1
```

```
In[10]:= iad["NonIdentifiableParameters"]
```

```
Out[10]= {k03, k04, k24, k42, k43}
```

```
In[11]:= endTime = AbsoluteTime[]
          N[endTime - startTime]
```

```
Out[11]= 3.6879518353041970 × 109
```

```
Out[12]= 0.447809
```