

```
In[66]:= Needs["IdentifiabilityAnalysis`"]
        startTime = AbsoluteTime[]
```

```
Out[67]:= 3.6878026538464756 × 109
```

```
In[68]:= vars = {x1, x2, x3}
```

```
Out[68]:= {x1, x2, x3}
```

```
In[69]:= params = {k02, k03, k12, k13, k21, k31, v1}
```

```
Out[69]:= {k02, k03, k12, k13, k21, k31, v1}
```

```
In[70]:= sys = {x1'[t] == k13 * x3[t] + k12 * x2[t] - (k21 + k31) * x1[t] + u1[t],
               x2'[t] == k21 * x1[t] - (k12 + k02) * x2[t],
               x3'[t] == k31 * x1[t] - (k13 + k03) * x3[t],
               x1[0] == 0, x2[0] == 0, x3[0] == 0}
```

```
Out[70]:= {x1'[t] == u1[t] - (k21 + k31) x1[t] + k12 x2[t] + k13 x3[t],
           x2'[t] == k21 x1[t] - (k02 + k12) x2[t],
           x3'[t] == k31 x1[t] - (k03 + k13) x3[t], x1[0] == 0, x2[0] == 0, x3[0] == 0}
```

```
In[71]:= {x1'[t] == u1[t] - (k21 + k31) x1[t] + k12 x2[t] + k13 x3[t],
          x2'[t] == k21 x1[t] - (k02 + k12) x2[t], x3'[t] == k31 x1[t] - (k03 + k13) x3[t],
          x1[0] == 0, x2[0] == 0, x3[0] == c0 g, x4[0] == 0, x5[0] ==  $\frac{1}{c0 ka + c0 g kc + ka kc}$ }
```

```
Out[71]:= {x1'[t] == u1[t] - (k21 + k31) x1[t] + k12 x2[t] + k13 x3[t],
           x2'[t] == k21 x1[t] - (k02 + k12) x2[t], x3'[t] == k31 x1[t] - (k03 + k13) x3[t],
           x1[0] == 0, x2[0] == 0, x3[0] == c0 g, x4[0] == 0, x5[0] ==  $\frac{1}{c0 ka + c0 g kc + ka kc}$ }
```

```
In[72]:= output = {x1[t] / v1}
```

```
Out[72]:=  $\left\{ \frac{x1[t]}{v1} \right\}$ 
```

```
In[73]:= iad = IdentifiabilityAnalysis[{sys, output}, vars, params, t, {u1}]
```

```
Out[73]:= IdentifiabilityAnalysisData[False, <>]
```

```
In[74]:= iad["IdentifiableQ"]
```

```
Out[74]:= False
```

```
In[75]:= iad["DegreesOfFreedom"]
```

```
Out[75]:= 1
```

```
In[76]:= iad["NonIdentifiableParameters"]
```

```
Out[76]:= {k02, k03, k12, k13, k21, k31}
```

```
In[77]:= endTime = AbsoluteTime[]
        N[endTime - startTime]
```

```
Out[77]:= 3.6878026542596730 × 109
```

```
Out[78]:= 0.413197
```

```
In[79]:=
```