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$$\begin{aligned}dSh/dt &= mh * (Sh + Lh + Ih + Rh) - bv * Sh * Iv / (Sh + Lh + Ih + Rh) - mh * Sh, \\dLh/dt &= bv * Sh * Iv / (Sh + Lh + Ih + Rh) - ah * Lh - mh * Lh, \\dIh/dt &= ah * Lh - gh * Ih - mh * Ih, \\dRh/dt &= gh * Ih - mh * Rh, \\dSv/dt &= mv * (Sv + Lv + Iv) - bh * Sv * Ih / (Sh + Lh + Ih + Rh) - mv * Sv, \\dLv/dt &= bh * Sv * Ih / (Sh + Lh + Ih + Rh) - av * Lv - mv * Lv, \\dIv/dt &= av * Lv - mv * Iv, \\y1 &= ah * Lh, \\y2 &= Ih / (Sh + Lh + Ih + Rh)\end{aligned}$$

Determine Clear Log Save Output

Running SIAN:

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=> Step 0. Extracting states, inputs, outputs, and parameters from the system
=> Step 1. Constructing the maximal polynomial system
=> Step 2. Truncating the polynomial system based on the Jacobian condition
=> Step 3. Assessing local identifiability
=> Step 4. Randomizing the truncated system
=> Step 5. Assessing global identifiability



▼Outputs:

Globally Identifiable Parameters

Running

Identifiability of Inidividual Parameters:

Locally Identifiable Paramters

$[ah, av, bh, gh, mh, mv, Sh(0), Lh(0), Ih(0), Rh(0)]$

Not Identifiable Parameters

$[lv(0), Lv(0), Sv(0), bv]$

Identifiable Combinations:

Bound on the number of experiments:

Multi-Experient identifiable functions are generated by:

Single-Experiment identifiable functions are generated by:

CPU runtime of SIAN (sec)

CPU runtime of Multi-Experiment Identifiability (sec)

CPU runtime of Single-Experiment Identifiability (sec)

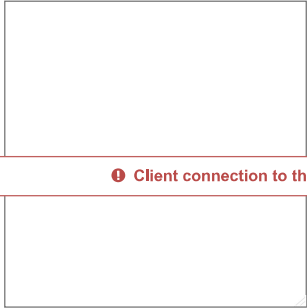
▼ Execution Log:

SIAN log:

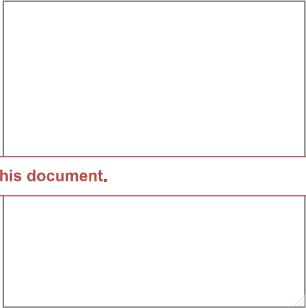
```
Using text-based input format:

[diff(Sh(t),t) = mh*
(Sh(t)+Lh(t)+Ih(t)+Rh(t))-
bv*Sh(t)*Iv(t)/(Sh(t)+Lh(t)+Ih(t)+Rh(t)
))-mh*Sh(t), diff(Lh(t),t) =
bv*Sh(t)*Iv(t)/(Sh(t)+Lh(t)+Ih(t)+Rh(t)
))-ah*Lh(t)-mh*Lh(t), diff(Ih(t),t) =
-gh*Ih(t)-mh*Ih(t)+ah*Lh(t),
diff(Rh(t),t) = gh*Ih(t)-mh*Rh(t),
diff(Sv(t),t) = mv*
(Sv(t)+Lv(t)+Iv(t))-
bh*Sv(t)*Ih(t)/(Sh(t)+Lh(t)+Ih(t)+Rh(t)
))-mv*Sv(t), diff(Lv(t),t) =
bh*Sv(t)*Ih(t)/(Sh(t)+Lh(t)+Ih(t)+Rh(t)
))-av*Lv(t)-mv*Lv(t), diff(Iv(t),t) =
-mv*Iv(t)+av*Lv(t), y1(t) = ah*Lh(t),
y2(t) =
Ih(t)/(Sh(t)+Lh(t)+Ih(t)+Rh(t))]
```

Multi-Experiment Identifiability Log



Single-Experiment Identifiability Log



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