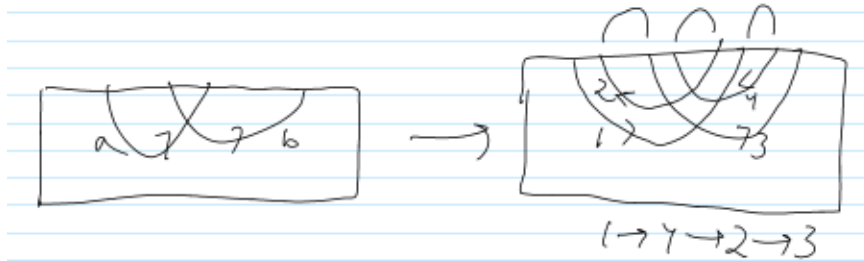


Pensieve Header: An attempt on the genus property using Γ -calculus.

```
dir = SetDirectory["C:/drorbn/AcademicPensieve/2014-06/"];
<< MetaCalculi/MetaCalculi-Program.m
```



$$\gamma_0 = \Gamma \left[\omega[T_a, T_b], h_a T_a^\alpha T_b^\gamma + h_b T_a^\beta T_b^\delta, \{t_a t_b\} \cdot \begin{pmatrix} \alpha[T_a, T_b] & \beta[T_a, T_b] \\ \gamma[T_a, T_b] & \delta[T_a, T_b] \end{pmatrix} \cdot \{h_a h_b\} \right]$$

$$\begin{pmatrix} \omega[T_a, T_b] & s_a & s_b \\ s_a & \alpha[T_a, T_b] & \beta[T_a, T_b] \\ s_b & \gamma[T_a, T_b] & \delta[T_a, T_b] \\ \Sigma & T_a^\alpha T_b^\gamma & T_a^\beta T_b^\delta \end{pmatrix}$$

```
 $\gamma_1 = \gamma_0 // \text{q}\Delta[\mathbf{a}, 1, 2] // \text{dS}[2] // \text{q}\Delta[\mathbf{b}, 3, 4] // \text{dS}[4]$ 
```

A very large output was generated. Here is a sample of it:

(<<1>>)

Show Less	Show More	Show Full Output	Set Size Limit...
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```
 $\gamma_{1p} = \gamma_1 //$ 
 $\text{rCollect}[\text{Simplify}[\text{Limit}[\text{Limit}[\text{Limit}[\text{Limit}[\#, T_1 \to T], T_2 \to T], T_3 \to T], T_4 \to T]] \&]$ 
$Aborted
```

```
 $\gamma_2 = \gamma_1 // \text{dm}[1, 4, 1]$ 
```

$$\left(\frac{T_1}{T_2} \right)^{-\alpha-\beta} \left(\frac{T_3}{T_1} \right)^{-\gamma-\delta} \left(\frac{T_1}{T_2} \right)^{\alpha+\beta} \left(\frac{T_3}{T_1} \right)^{\gamma+\delta} - T_1 \left(\frac{T_1}{T_2} \right)^{\alpha+\beta} \left(\frac{T_3}{T_1} \right)^{\gamma+\delta} - \left(\frac{T_1}{T_2} \right)^{\alpha+\beta} T_3 \left(\frac{T_3}{T_1} \right)^{\gamma+\delta} + T_1 \left(\frac{T_1}{T_2} \right)^{\alpha+\beta} T_3 \left(\frac{T_3}{T_1} \right)^{\gamma+\delta} - \left(\frac{T_1}{T_2} \right)^\beta \left(\frac{T_3}{T_1} \right)^\delta \alpha \left[\frac{T_1}{T_2}, \frac{T_3}{T_1} \right] + \left(\frac{T_1}{T_2} \right)^\beta T_2 \left(\frac{T_3}{T_1} \right)^\delta \alpha \left[\frac{T_1}{T_2}, \frac{T_3}{T_1} \right]$$

```
 $\gamma_{2p} = \gamma_2 // \text{rCollect}[\text{Simplify}[\text{Limit}[\text{Limit}[\text{Limit}[\#, T_1 \to T], T_2 \to T], T_3 \to T]] \&]$ 
$Aborted
```

$\gamma_3 = \gamma_2 // \text{dm}[1, 2, 1]$

Power::infy: Infinite expression $\frac{1}{0}$ encountered. >>

$$\left(\begin{array}{ll} \text{ComplexInfinity} & s_1 \\ & s_1 \\ & s_3 \\ & \Sigma \end{array} \begin{array}{l} 1 \\ 1 \\ 0 \\ \left(\frac{T_3}{T_1}\right)^{-\delta} \end{array} \right) - \frac{\overline{T_1 \left(\frac{T_3}{T_1}\right)^{\gamma} - T_3 \left(\frac{T_3}{T_1}\right)^{\gamma} - \left(\frac{T_3}{T_1}\right)^{\gamma+\delta} + T_3 \left(\frac{T_3}{T_1}\right)^{\gamma+\delta} - T_1 \alpha \left[\left(\frac{T_3}{T_1}\right)^{\gamma+\delta} - T_1 \left(\frac{T_3}{T_1}\right)^{\gamma+\delta} - \left(\frac{T_3}{T_1}\right)^{\delta} \alpha \left[1, \frac{T_3}{T_1}\right] + T_1 \left(\frac{T_3}{T_1}\right)^{\delta} \alpha \left[1, \frac{T_3}{T_1}\right] + T_1 \left(\frac{T_3}{T_1}\right)^{\gamma+\delta} \beta \left[1, \frac{T_3}{T_1}\right] - T_3 \left(\frac{T_3}{T_1}\right)^{\gamma+\delta} \beta \left[1, \frac{T_3}{T_1}\right] - \beta \left[1, \frac{T_3}{T_1}\right]}{T_1 \left(\frac{T_3}{T_1}\right)^{\gamma} - T_3 \left(\frac{T_3}{T_1}\right)^{\gamma} - \left(\frac{T_3}{T_1}\right)^{\gamma+\delta} + T_3 \left(\frac{T_3}{T_1}\right)^{\gamma+\delta} - T_1 \alpha}$$

$\gamma_4 = \gamma_3 // \text{dm}[1, 3, 1]$

$$\left(\begin{array}{ll} \text{ComplexInfinity} & s_1 \\ & s_1 \\ & \Sigma \end{array} \begin{array}{l} 1 \\ 1 \\ 1 \end{array} \right)$$