

$$\frac{T_f}{T_0} : g \sim p(k)$$

$$p(k) = \frac{\lambda^k}{k!} e^{-\lambda}$$

$$\lambda = 0,05$$

$$h=200$$

	A1	A2	A3	A4	A5
λ_i	0	1	2	3	4
m_i	109	65	22	3	1.
p_i	$e^{-\lambda}$	$\lambda e^{-\lambda}$	$\frac{\lambda^2}{2} e^{-\lambda}$	$\frac{\lambda^3}{6} e^{-\lambda}$	$\frac{\lambda^4}{24} e^{-\lambda}$

$$\text{OMNF: } L = (e^{-\lambda})^{109} \cdot (\lambda e^{-\lambda})^{65} \cdot \left(\frac{\lambda^2}{2} e^{-\lambda}\right)^{22} \cdot \left(\frac{\lambda^3}{6} e^{-\lambda}\right)^3 \cdot \left(\frac{\lambda^4}{24} e^{-\lambda}\right) = \frac{\lambda^{122} \cdot e^{-200\lambda}}{c}$$

$$\ln L = 122 \ln \lambda - 200\lambda - \ln c$$

$$(\ln L)'_{\lambda} = \frac{122}{\lambda} - 200 \Rightarrow \lambda = 0,61$$

$$(\ln L)''_{\lambda} = -\frac{122}{\lambda^2} < 0 \Rightarrow \text{max}$$

$$\text{Max P: } 108,67, 66,29, 20,22, \underbrace{11}_{\text{odg grüner}} 0,63$$

Toya

T8

$$\begin{array}{c}
 A_1 \quad A_2 \quad A_3 \quad A_4 \\
 p_i \quad 109 \quad 68 \quad 22 \\
 p_i e^{-\lambda} \quad \lambda e^{-\lambda} \quad \frac{\lambda^2}{2} e^{-\lambda} \quad \left(\frac{\lambda^3}{6} + \frac{\lambda^4}{24}\right) e^{-\lambda} \\
 L = (e^{-\lambda})^{109} \cdot (\lambda e^{-\lambda})^{68} \cdot \left(\frac{\lambda^2}{2} e^{-\lambda}\right)^{22} \cdot \left(\frac{\lambda^3}{6} + \frac{\lambda^4}{24}\right)^4 e^{-4\lambda}
 \end{array}$$

$$\ln L = 109 \ln \lambda - 200\lambda + 4 \ln (4\lambda^3 + \lambda^4)$$

$$(\ln L)' = \frac{109}{\lambda} - 200 + \frac{4(3+4\lambda)}{4\lambda + \lambda^2} > 0$$

$$\Rightarrow \lambda = 0,608$$

$$(\ln L)'' = -\frac{109}{\lambda^2} + \frac{16(4\lambda+1)^2 - 12\lambda+4}{(4\lambda+\lambda^2)^2} < 0$$

$\Rightarrow \text{max}$

$$\Rightarrow \ln p_i: 108,93 \quad 66,19 \quad 20,11 \quad 4,7$$

$$\Delta \approx \chi^2 / (k-1-1) = \chi^2 / 2$$

$$\hat{\Delta} = \frac{(108,93 - 109)^2}{108,93} + \dots + \frac{(4,7 - 4)^2}{4,7} \approx 0,3$$

$$p\text{-value} = P(B \geq \hat{\Delta} | H_0) \approx \int_{0,3}^{+\infty} g(t) dt = 0,86 > 0,05$$

\Rightarrow нет оснований отвергать H_0