

### Beispiel: Pavian Stamm im Amboseli NP, Kenya (aus Guttorp)

Veränderung der Mitgliederanzahl durch Geburt (B), Einwanderung (I), Auswanderung (E), Tod (D).  
Annahme eines Geburts-Todes-Prozesses.

Tabelle 1: Ereignisse im Pavian Stamm

nach so vielen Tagen	Anzahl	Ereignis
41	40	B
5	41	B
22	42	B
2	43	D
17	42	D
26	41	I
0	42	I
55	43	B
35	44	I
20	45	E
5	44	D
6	43	E
32	42	D
4	41	D
0	40	D
22	39	D
10	38	B
0	39	B
7	40	D
4	39	B
17	40	D
11	39	E
3	38	B
4	39	D
8	38	D
2	37	D
5	36	B
10	37	B

Tabelle 2:  $n_{ij}$ ,  $\hat{\lambda}_{ij}$ 

$i, j$	$n_{ij}$	$\hat{\lambda}_{ij}$	$i, j$	$n_{ij}$	$\hat{\lambda}_{ij}$
36, 37		$\frac{1}{5} = 0.2$	37, 36		$\frac{1}{12}$
37, 38		$\frac{1}{12}$	38, 37		$\frac{1}{21}$
38, 39		$\frac{2}{21}$	39, 38		$\frac{3}{41}$
39, 40		$\frac{2}{41}$	40, 39		$\frac{3}{65}$
40, 41		$\frac{1}{65}$	41, 40		$\frac{1}{35}$
41, 42		$\frac{2}{35}$	42, 41		$\frac{2}{71}$
42, 43		$\frac{2}{71}$	43, 42		$\frac{2}{63}$
43, 44		$\frac{1}{63}$	44, 43		$\frac{1}{40}$
44, 45		$\frac{1}{40}$	45, 44		$\frac{1}{20}$

Tabelle 3:  $\gamma_i$ 

$\gamma_{36} =$	5	= 5
$\gamma_{37} =$	2+10	= 12
$\gamma_{38} =$	10+3+8	= 21
$\gamma_{39} =$	22+0+4+11+4	= 41
$\gamma_{40} =$	41+0+7+17	= 65
$\gamma_{41} =$	5+26+4	= 35
$\gamma_{42} =$	22+17+0+32	= 71
$\gamma_{43} =$	2+55+6	= 63
$\gamma_{44} =$	35+5	= 40
$\gamma_{45} =$	20	= 20

Tabelle 4:  $\hat{\lambda}_i$ 

$\hat{\lambda}_{36} =$	$\frac{1}{5}$	= 0.2
$\hat{\lambda}_{37} =$	$\frac{2}{12}$	= 0.17
$\hat{\lambda}_{38} =$	$\frac{3}{21}$	= 0.14
$\hat{\lambda}_{39} =$	$\frac{5}{41}$	= 0.12
$\hat{\lambda}_{40} =$	$\frac{4}{65}$	= 0.06
$\hat{\lambda}_{41} =$	$\frac{3}{35}$	= 0.09
$\hat{\lambda}_{42} =$	$\frac{4}{71}$	= 0.06
$\hat{\lambda}_{43} =$	$\frac{3}{63}$	= 0.03
$\hat{\lambda}_{44} =$	$\frac{2}{40}$	= 0.025
$\hat{\lambda}_{45} =$	$\frac{1}{20}$	= 0.05