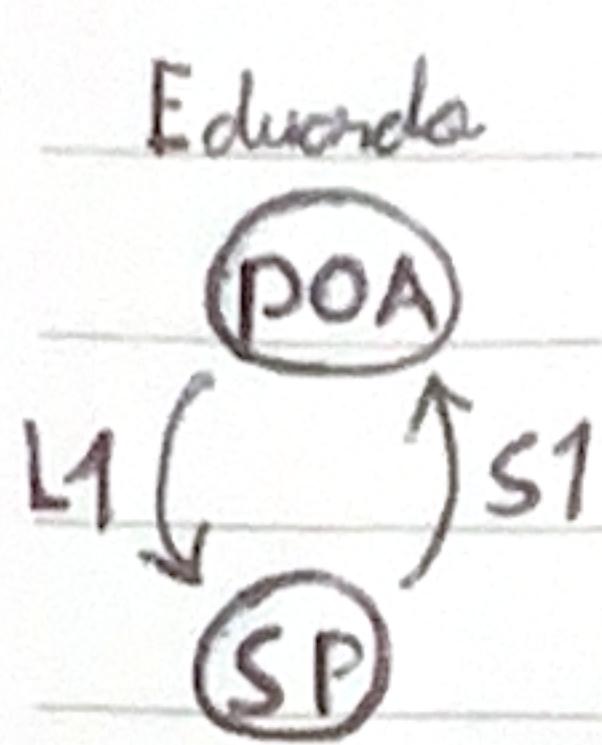


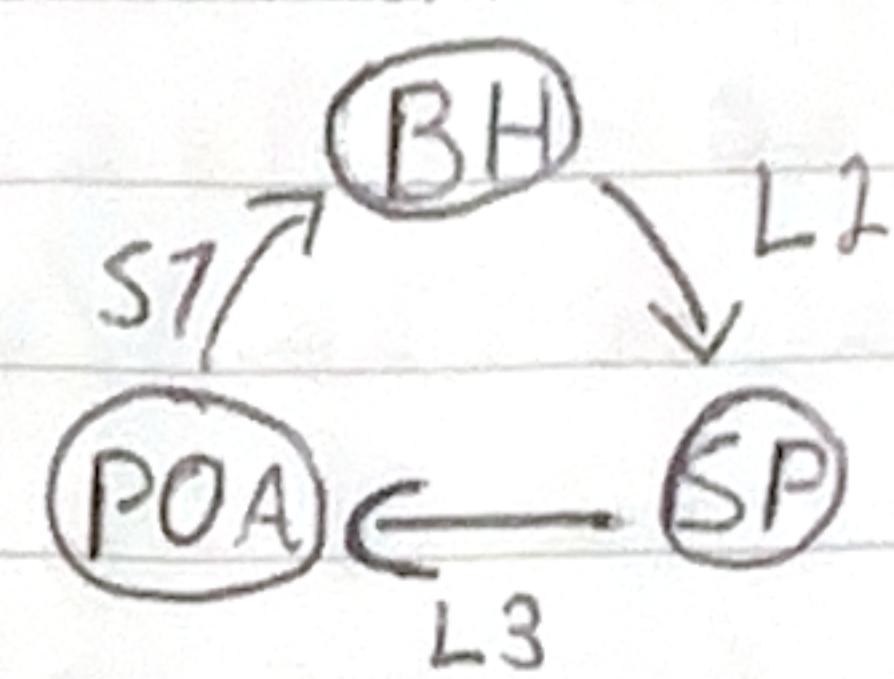
E6 - Mateus Coqueirinha

Eduarda



(SAN)

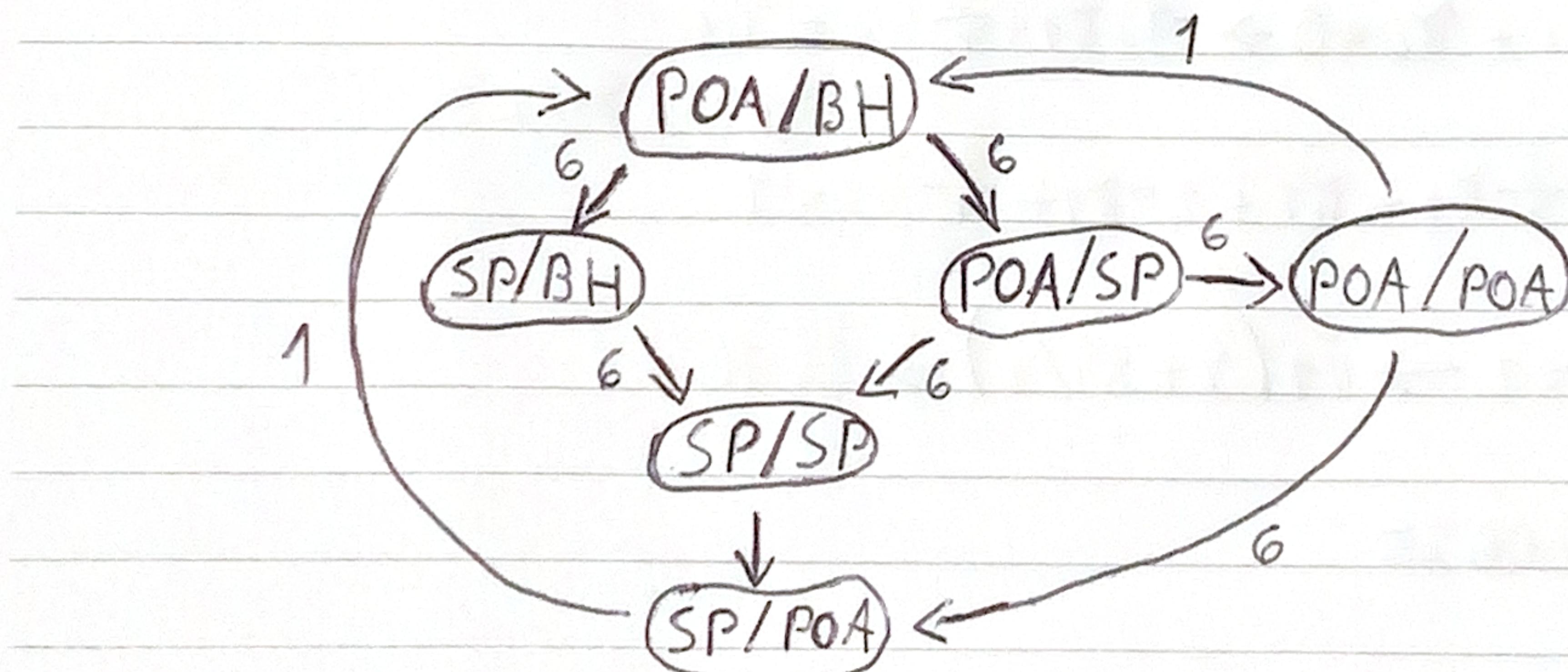
Mônica



Tipo	Evento	Taxa
Ioc	L1	6
Ioc	L2	6
Ioc	L3	6
Syn	S1	1

PSS: product state space
 $\{POA, SP\} \times \{BH, SP, POA\}$
 $POA/BH, POA/SP, POA/POA$
 $SP/BH, SP/SP, SP/POA$

Markov



Matriz de Transição

POA/BH	POA/SP	POA/POA	SP/BH	SP/SP	SP/POA
POA/BH	-12	6	0	6	0
POA/SP	0	-12	6	0	6
POA/POA	1	0	-7	0	0
SP/BH	0	0	0	-6	6
SP/SP	0	0	0	0	-6
SP/POA	1	0	0	0	-1

Totas: $\pi(L_1), \pi(L_2), \pi(L_3), \pi(S_1)$

$$1. -12\pi_1 + \pi_3 + \pi_6 = 0$$

$$2. 6\pi_1 - 12\pi_2 = 0 \rightarrow 6\pi_1 = 12\pi_2 \rightarrow \pi_2 = 0,5\pi_1$$

$$3. 6\pi_2 - 7\pi_3 = 0 \rightarrow \pi_3 = \frac{3}{7}\pi_1$$

$$4. 6\pi_1 - 6\pi_4 = 0 \rightarrow 6\pi_1 = 6\pi_4 \rightarrow \pi_4 = \pi_1$$

$$5. 6\pi_2 + 6\pi_4 - 6\pi_6 = 0 \rightarrow \pi_5 = 1,5\pi_1$$

$$6. 6\pi_3 + 6\pi_5 - 1\pi_6 = 0$$

$$7. \pi_1 + \pi_2 + \pi_3 + \pi_4 + \pi_5 + \pi_6 = 1$$

$$5. \rightarrow 6(0,5\pi_1) + 6\pi_1 = 6\pi_5 \rightarrow 3\pi_1 + 6\pi_1 = 6\pi_5 \rightarrow \frac{9}{6}\pi_1 = \pi_5 \\ \downarrow \pi_5 = 1,5\pi_1$$

$$3. 6(0,5\pi_1) = 7\pi_3 \rightarrow \frac{3}{7}\pi_1 = \pi_3$$

$$1. -12\pi_1 + \frac{3}{7}\pi_1 + \pi_6 = 0 \rightarrow -12\pi_1 + \frac{3}{7}\pi_1 = \pi_6$$

$$\pi_6 = 81/7\pi_1$$

$$7. \pi_1 + 0,5\pi_1 + \frac{3}{7}\pi_1 + \pi_1 + 1,5\pi_1 + \frac{81}{7}\pi_1 = 1$$

$$4\pi_1 + \frac{81}{7}\pi_1 = 1 \rightarrow \pi_1(4 + 81/7) \rightarrow \pi_1 \cdot 16 = 1$$

$$\pi_1 = \frac{1}{16} = 0,0625$$

$$\pi_1 = 0,0625$$

$$\pi_2 = 0,0312$$

$$\pi_3 = 0,0268$$

$$\pi_4 = 0,0625$$

$$\pi_5 = 0,0938$$

~~$$\pi_6 = 0,0625$$~~

$$\pi_6 = 0,7232$$

$$\text{Estado 3 (POA/POA)} \rightarrow \pi_3 = 0,0268$$

$$\text{Estado 5 (SP/SP)} \rightarrow \pi_5 = 0,0938$$

Probabilidade de estarem na mesma cidade ao mesmo tempo:

$$\pi_3 + \pi_5 = 0,0268 + 0,0938 = 0,1205$$

12,08%