Modelos coalescentes

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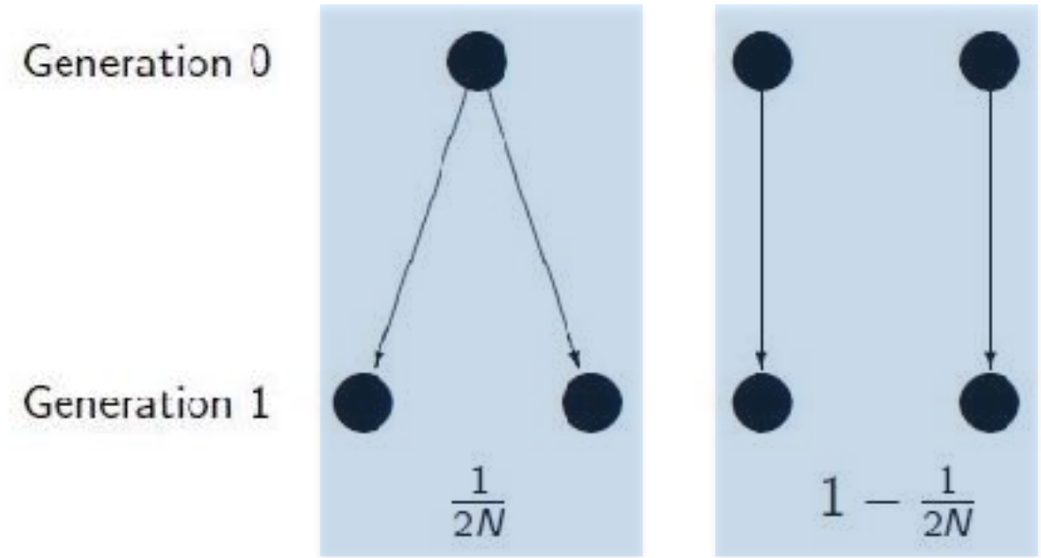
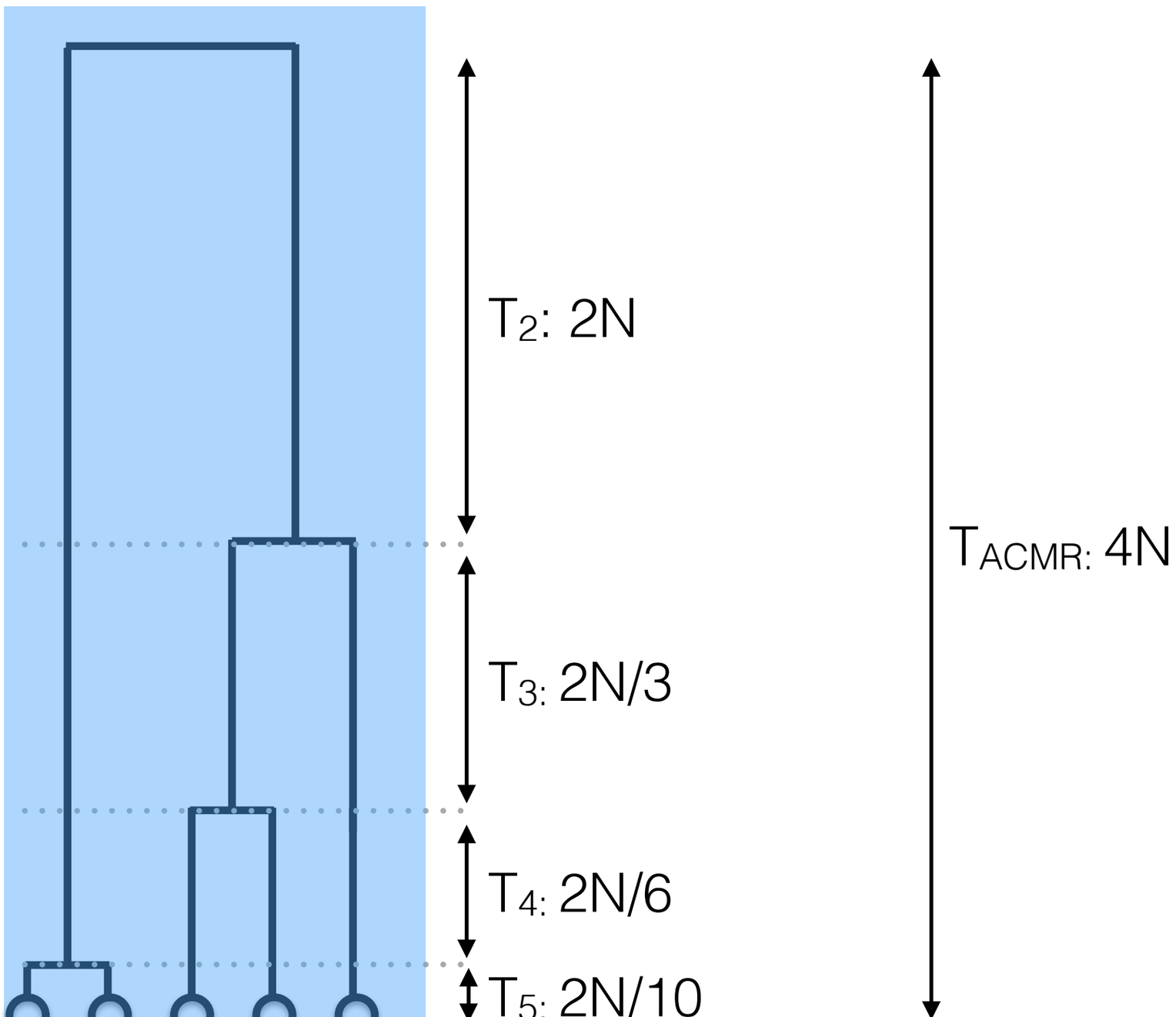
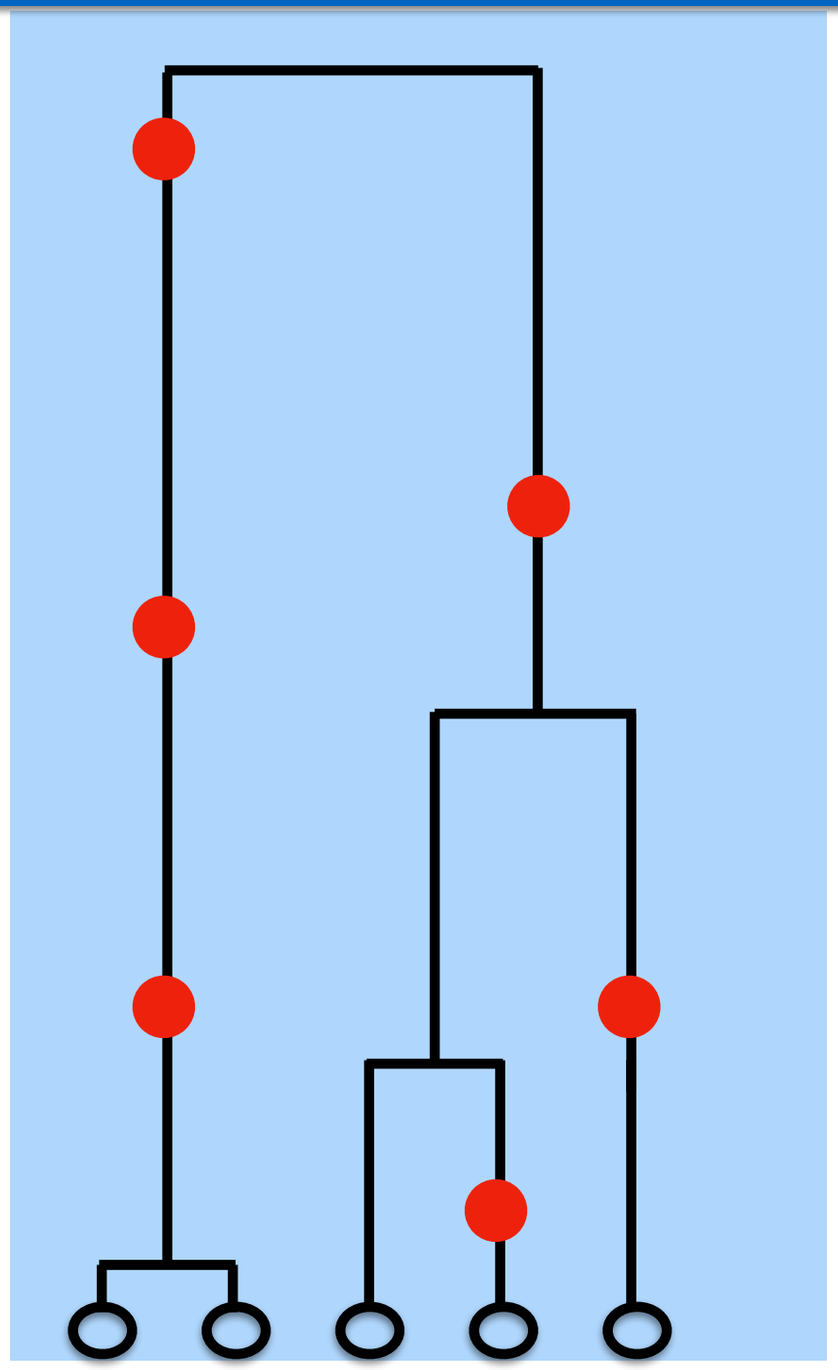


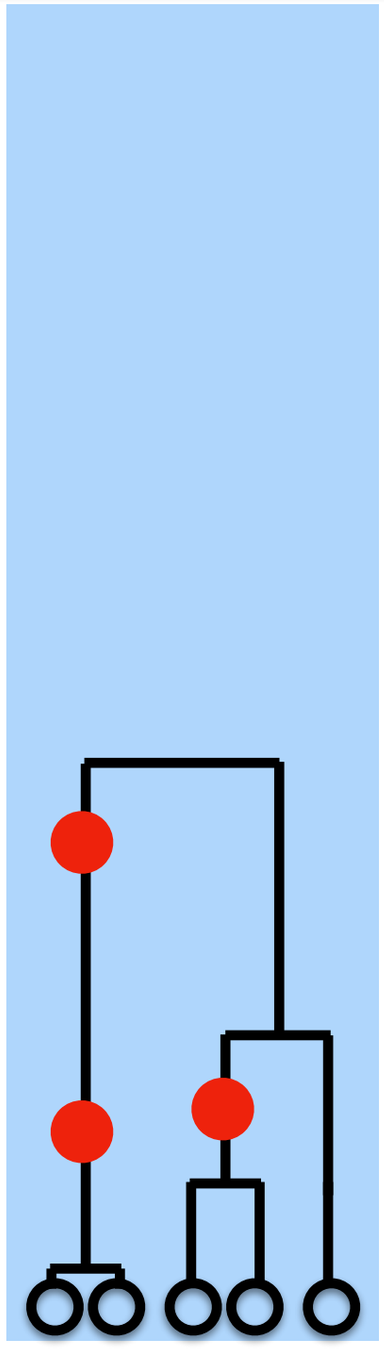
	$P_{coal}(t = 1)$	$E(t)$
sample of 2	$\frac{1}{2N}$	$2N$

Genealogia e variação genética

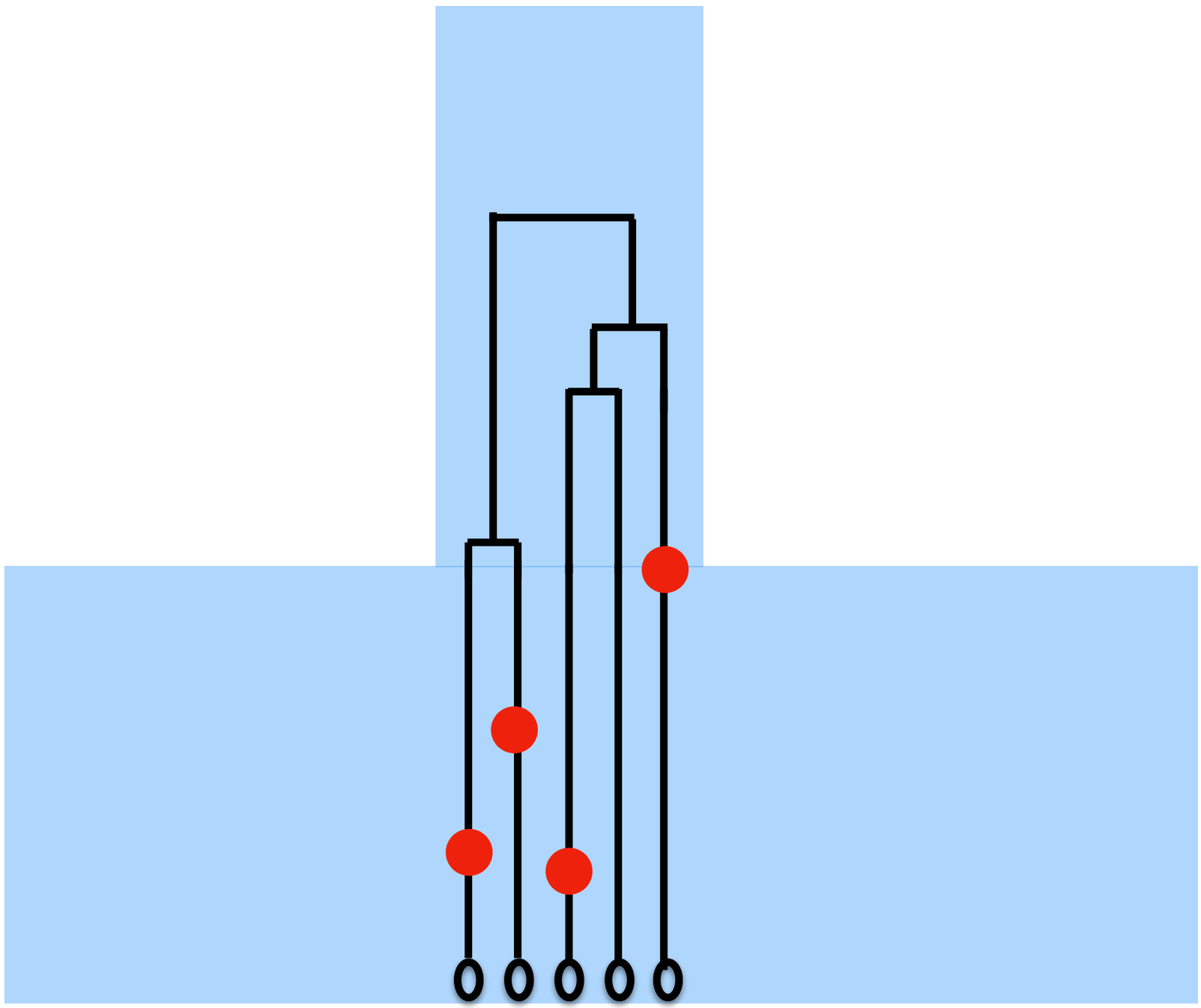


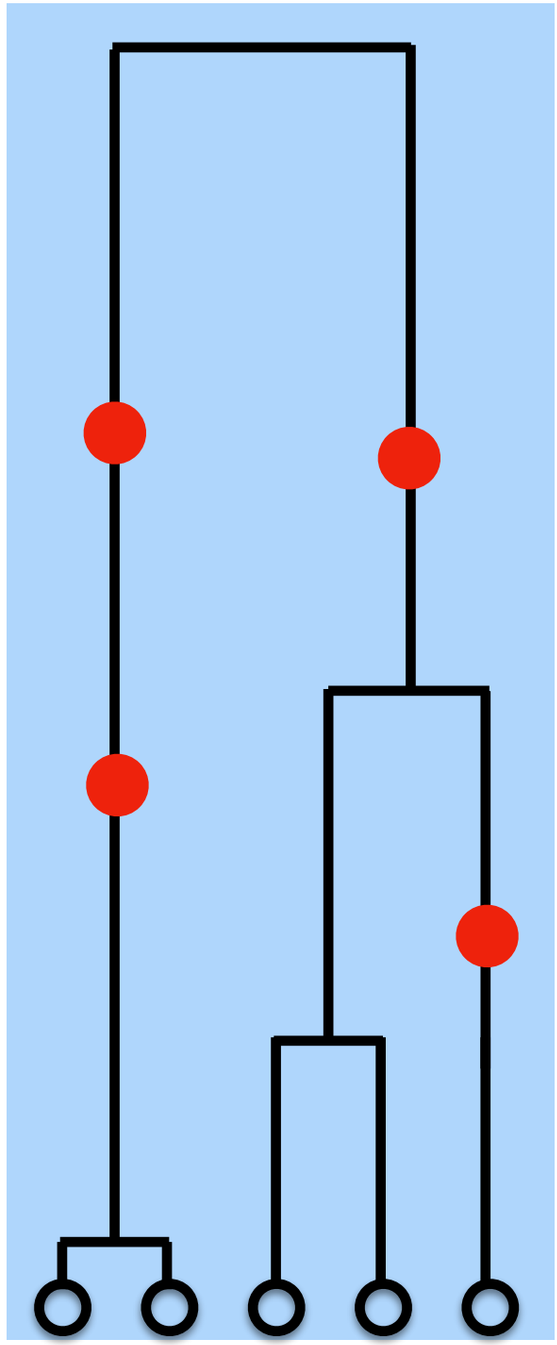
Genealogia e variação genética



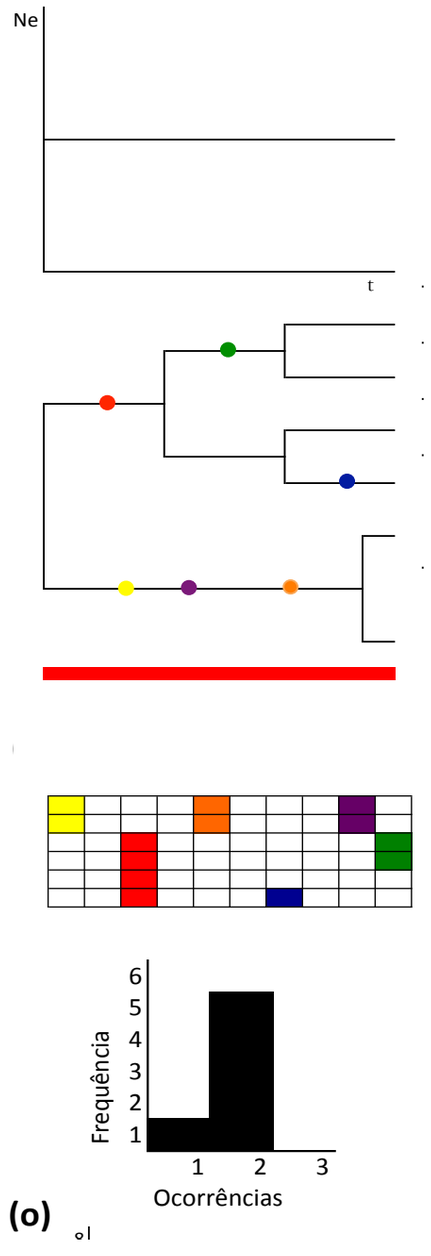


Genealogia e variação genética

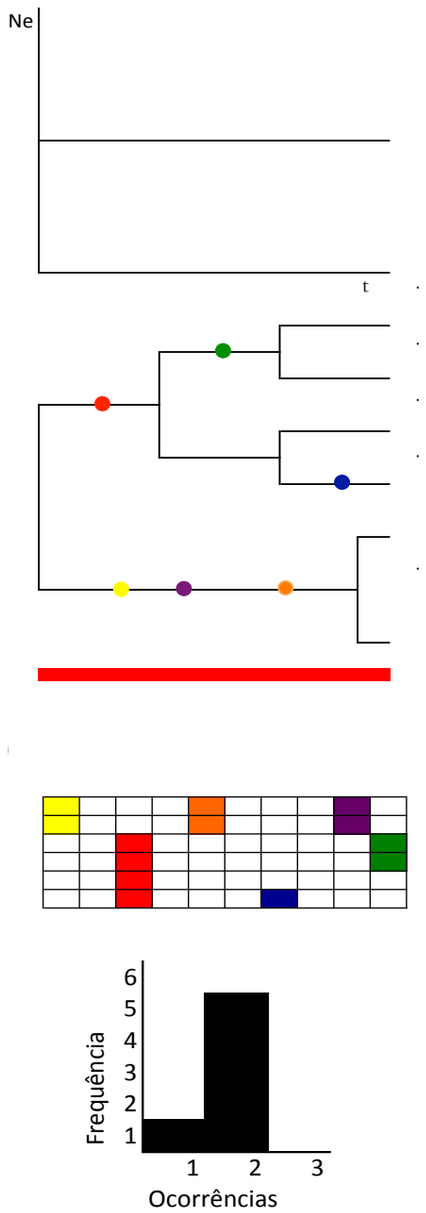


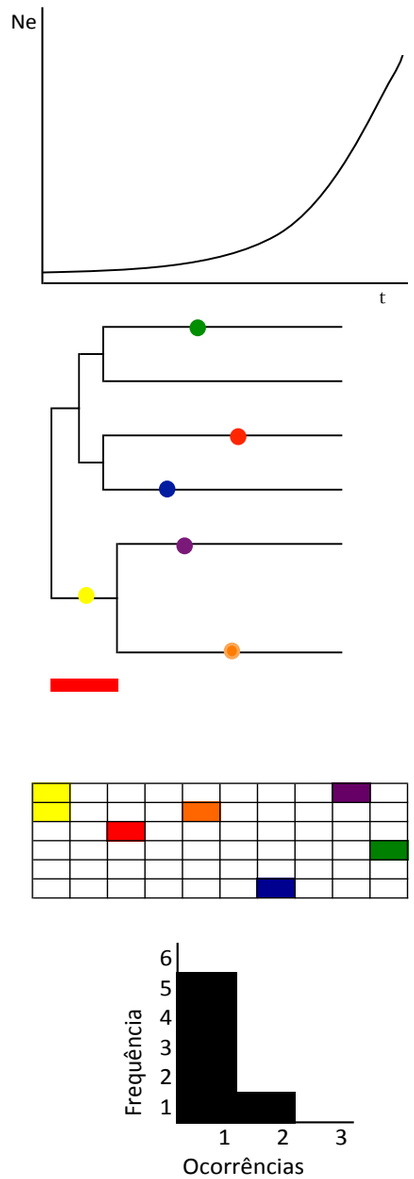


Genealogia e variação genética



Genealogia e variação genética





Estimadores de 4Nμ (θ)

Sítios polimórficos

$$S = T_{tot} \times \mu$$

$$E(S) = 4N \times a_n \times \mu$$

$$\theta_s = \frac{S}{a_n}$$

Número médio de diferenças

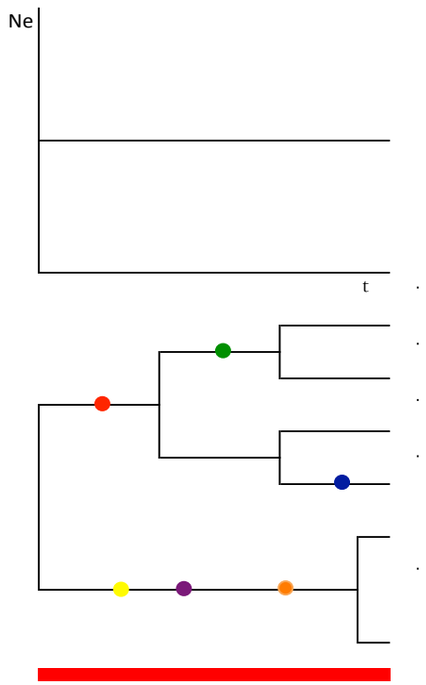
$$\pi = 2 \times T_{par} \times \mu$$

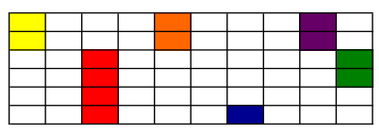
$$E(\pi) = 2 \times 2N \times \mu$$

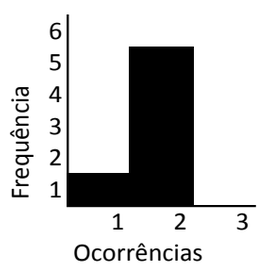
$$\theta_\pi = \pi$$

$$D = \frac{\theta_\pi - \theta_S}{V}$$

Genealogia e variação genética

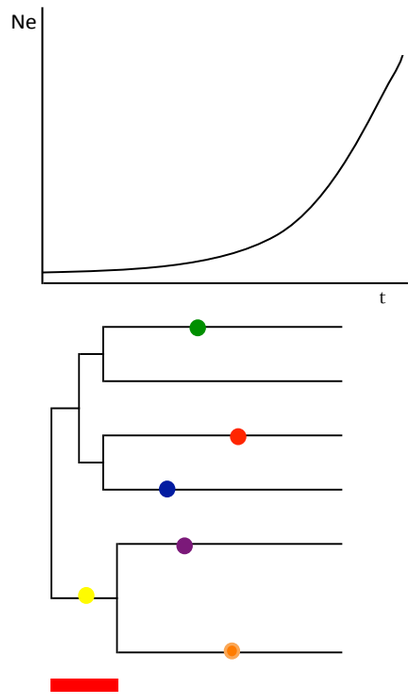


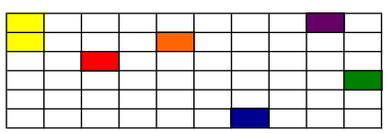


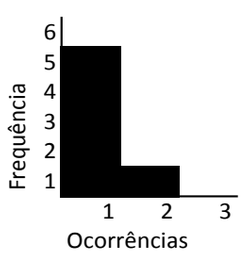


$$\pi = \theta_S$$

$$D = 0$$







$$\theta_S > \pi$$

$$D < 0$$

Um modelo populacional para seleção natural

	AA	Aa	aa
Ao nascimento	f_A^2	$2f_Af_a$	f_a^2

$$\bar{W} = f_A^2 W_{AA} + 2f_A f_a W_{Aa} + f_a^2 W_{aa}$$

$$f_A' = \frac{f_A^2 W_{AA} + f_A f_a W_{Aa}}{\bar{W}} \qquad f_a' = \frac{f_a^2 W_{aa} + f_A f_a W_{Aa}}{\bar{W}}$$

Diversos regimes seletivos

AA	Aa	aa	Alelo vantajoso	Alelo deletério
1	1	1-s	dominante	recessivo
1	1-s	1-s	recessivo	dominante
1	1-(s/2)	1-s	aditivo	
1-s	1	1-s	vantagem do heterozigoto	
1-s	1	1-t	vantagem do heterozigoto	
1	1-s	1	desvantagem do heterozigoto	