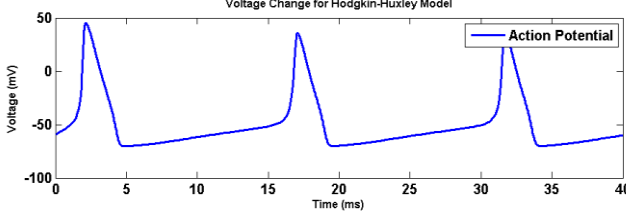
$$V_m(t_2) = V_m(t_1) + dt \cdot \frac{1}{Cm}\left(I_{Na} + I_K + I_l + Iap\right)$$



Modelo corriente de Sodio (Na)

$$I_{Na} = -g_{Na}(V_m - V_{Na})$$

$$g_{Na} = g_{barNa} \cdot m^3 \cdot h$$

$$\frac{dm(t,V_m)}{dt} = \alpha_m \cdot (1-m) - \beta_m \cdot m$$

$$\alpha_m = \frac{0.1 \cdot (V_m + 35)}{1 - \exp(-\frac{V_m + 35}{10})}$$

$$\beta_m = 4.0 \cdot \exp(-0.0556 \cdot (V_m + 60))$$

$$\frac{dh(t,V_m)}{dt} = \alpha_h \cdot (1-h) - \beta_h \cdot h$$

$$\alpha_h = 0.07 \cdot (-0.05(V_m + 60))$$

$$\beta_h = \frac{1}{1 + \exp(-0.1 \cdot (V_m + 30))}$$

Modelo corriente de Potasio (K)

$$I_K = -g_K(V_m - V_K)$$

$$g_K = g_{barK} \cdot n^4$$

$$\frac{dn(t,V_m)}{dt} = \alpha_n \cdot (1-n) - \beta_n \cdot n$$

$$\alpha_n = \frac{0.01 \cdot (V_m + 50)}{1 - \exp(-\frac{V_m + 50}{10})}$$

$$\beta_n = 0.125 \cdot \exp(-\frac{(V_m + 50)}{80})$$

$$I_l = -g_l(V_m - V_l)$$

Potenciales de Nerst

VNa=55.17 vm K
VK=-72.14 vm K
Vl=-49.42 vm K

Conductancias canales

gbarNa=1.2 mS/cm^2
gbarK=0.36 mS/cm^2
gl=0.003 mS/cm^2

Membrane Capacitance

Cm=0.01 uF/cm^2

Initial Values

Iap=0.1 uA
V(1)=-60 mV;