Integración Metropolis-Hasting

$$h(x) = f(x)\,g(x)$$

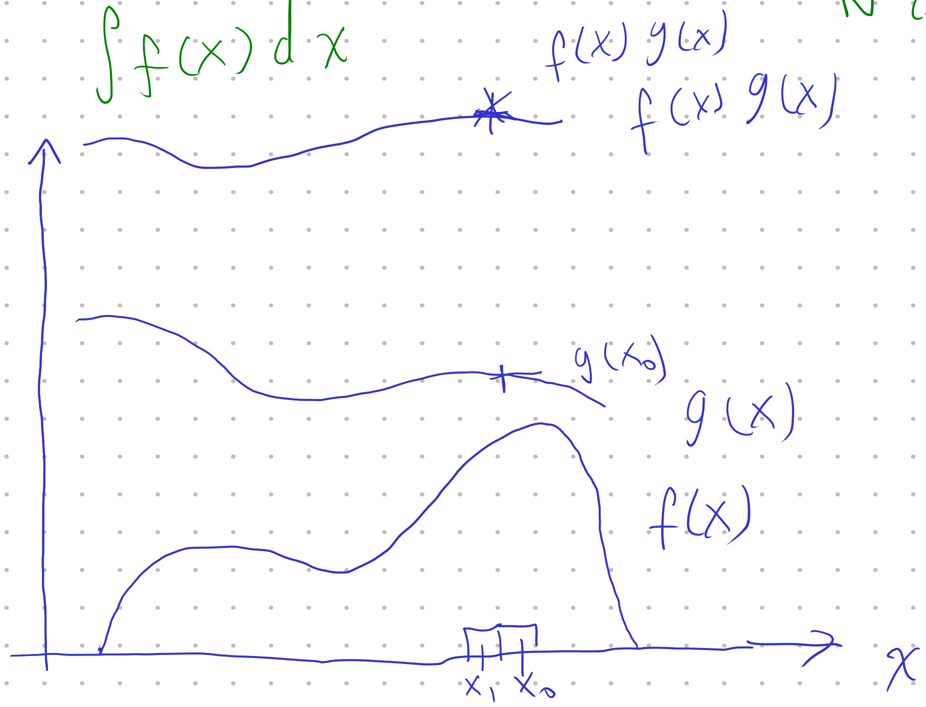
$$\int_{-\infty}^{\infty} f(x)\,g(x)\,dx \qquad f(x) \to P(x)$$

$$\int f(x)\,dx < M \qquad f(x) > 0 \text{ p.t } x$$

$$\int f(x)\,dx = C$$

$$\frac{\int f(x)\,g(x)\,dx}{\int f(x)\,dx} = \langle g(x) \rangle = \frac{1}{N}\sum_{i=1}^{N} g(\underset{\sim}{x_i})$$

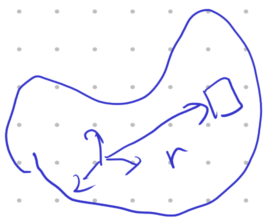
Muestreados de la función $f(x)$



$$\sum_{i=1}^{N} g(x_i)$$

$$dm = \rho_{(\vec{r})}\,dV$$

CM



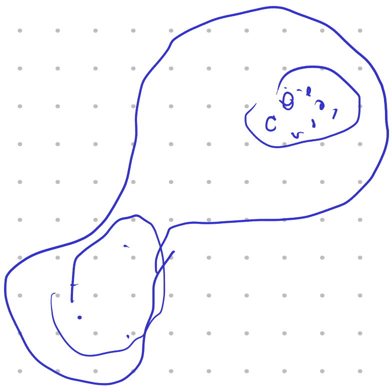
$$CM = \frac{\int \vec{r}\,dm}{\int dm}$$

$$CM = \frac{\int \vec{r}\,\rho(\vec{r})\,dV}{\int \rho(\vec{r})\,dV}$$

$$CM = \frac{\int \vec{r}\,\rho(\vec{r})\,dV}{\int \rho(\vec{r})\,dV} = \frac{1}{N}\sum_{i=0}^{N} \vec{r}_i \qquad \frac{\int f(x)\,g(x)\,dx}{\int f(x)\,dx} = \frac{1}{N}\sum g(x_i)$$

x_i muestrean en f

$$\rho(\vec{r}) \leadsto f(x) \qquad \vec{r} \approx g(x)$$



$$\rho = \psi(x,t)\,\psi^{*}(x,t) = |\psi(x,t)|^2$$

$$\int \rho(x)\,dx = 1$$

$$\frac{\int \overbrace{|\psi|^2}^{f(x)}\,\overbrace{\hat{u}}^{g(x)}\,dx}{\int |\psi|^2\,dx} = \frac{1}{N}\sum u(\vec{r}_i)$$