• Conociendo las propiedades

$$\bar{\delta} = \frac{\langle w(r)\, \delta(r) \rangle}{\langle w(r) \rangle} \quad ; \; n = \bar{n}\,(1+\delta)$$

Para la ec. de Hamilton.

$$\xi_H^2 = \frac{DD(r)\; RR(r)}{[DR(r)]^2}$$

donde

$$R_1 R_2 = \bar{n}^2 \langle\langle w_1, w_2 \rangle\rangle = \bar{n}^2 \iint w_1 w_2 \, dV_1\, dV_2$$

$$D_1 D_2 = (1 + \psi_1 + \psi_2 + \xi)\; R_1 R_2 .$$

donde $\psi = \dfrac{\langle\langle w\, w(r)\, \delta(r) \rangle\rangle}{\langle\langle w(r)\, w(r) \rangle\rangle}$.

y $\xi^2 = \dfrac{\langle\langle w(r) w(r)\, \delta(r)\, \delta(r) \rangle\rangle}{\langle w(r)\, w(r) \rangle\rangle}$.

Remplazando:

$$DD(r)\; RR(r) = (1 + \psi_1 + \psi_2 + \xi)\; R_1 R_2^2 .$$

y finalmente.

$$DR(r) = \int \bar{n}_1 w_1 \, dV_1 \int \bar{n}_2 w_2 \, dV_2 .$$

$$\bar{n} = \bar{n}\,(1+\delta)$$

$$DR(r) = \int n_1 w_1 \, dv_1 \int n_2 w_2 \, dV_2$$

$$DR(r) = \int \bar{n}_1 (1+\delta_1) w_1 \, dV_1 \int \bar{n}_2 w_2 \, dV_2 .$$

$$DR(r) = \bar{n}^2 \iint (1+\delta_1)\, w_1 w_2 \, dV_1\, dV_2$$

$$DR(r) = \bar{n}^2 \left(\langle\langle w_1 w_2 \rangle\rangle + \langle w_1 w_2 \delta_1 \rangle\rangle \right)$$

Así

$$[DR(r)]^2 = \bar{n}^4 (\langle\langle w_1 w_2 \rangle\rangle + \langle w_1 w_2 \delta_1 \rangle\rangle)^2$$

$$[DR(r)]^2 = \bar{n}^4 (1 + \psi_1)^2 \langle\langle w_1 w_2 \rangle\rangle.$$

$$\xi_H^{(2)}(r) = \frac{(1 + \psi_1 + \psi_2 + \xi)\, \bar{n}^4 \cancel{\langle\langle w_1 w_2 \rangle\rangle^2}}{\bar{n}^4 (1+\psi_1)^2 \cancel{\langle\langle w_1 w_2 \rangle\rangle^2}}.$$

$$\xi_H^{(2)}(r) = \frac{1 + \psi_1 + \psi_2 + \xi}{n^4 (1 + \psi_1)^2}.$$

Repitiendo el Paso anterior del mismo. para el estimador Candy - Slady.

$$\xi_{LS}^2 = 1 + \frac{1}{N_{est}^2} \frac{DD(r)}{RR(r)} - \frac{2}{N_{ost}} \frac{DR(r)}{RR(r)}.$$

donde $\frac{1}{N_{est}} = \frac{1}{n_{est}} = \frac{1}{(1+\xi)^2}$

y como ya. sabemos

$$R_1R_2 = \bar{n}^2 \langle\langle w_1 w_2 \rangle\rangle$$

$$D_1D_2 = (1 + \psi_1 + \psi_2 + \xi)\, R_1R_2.$$

$$DR(r) = \bar{n}^2 (1 + \psi_1) \langle\langle w_1 w_2 \rangle\rangle$$

entonces tenemos

$$\xi_{LS}^2 = 1 + \frac{1}{(1+\delta)^2} (1 + \psi_1 + \psi_2 + \xi) - \frac{2}{(1+\delta)} \frac{\cancel{\bar{n}^2}(1+\psi_1) \cancel{\langle\langle w_1 w_2 \rangle\rangle}}{\cancel{\bar{n}^2 \langle\langle w_1 w_2 \rangle\rangle}}$$

$$\xi_{LS}^2 = 1 + \frac{1}{(1+\delta)^2} (1 + \psi_1 + \psi_2 + \xi) - \frac{2}{(1+\delta)} (1 + \psi_1)$$