STATISTICS

$$\sigma_J = \sum_{i=1}^{N_b} A_{RING_i} \frac{N_{iJ}}{N_i}$$

$$SD_J = \sqrt{\sum_{i=1}^{N_b} A_{RING_i} \underbrace{\frac{N_{iJ}}{N_i}}_{P_{J_i}} \underbrace{\left(1 - \frac{N_{iJ}}{N_i}\right)}_{1 - P_{J_i}} \frac{A_{RING_i}}{N_i}}$$

BERNOULLI DISTRIBUTION

$$\sigma_J = (\pi b^2)\, P_J = \int_0^{2\pi}\int_0^{\infty} \tilde{b}\, \tilde{p}_J \, d\tilde{b}\, d\theta =$$

$$= 2\pi \left[\int_0^{b_1} b\, p_J \, db + \int_{b_1}^{b_2} b\, p_J \, db + \dots\right]$$

$$\cong \pi b_1^2 \frac{N_{1J}}{N_1} + \pi \left(b_2^2 - b_1^2\right) \frac{N_{2J}}{N_2} +$$

$$\cong \sum_{i=1}^{\infty} \pi \left(b_i - b_{i-1}\right) \frac{N_{iJ}}{N_i} \quad (b_0 = 0$$

$$VAR(\sigma_J) \overset{MC}{=} \frac{V^2}{N^2} VAR(P_J) \cong$$

$$\overset{BERNOULLI}{=} \sum_i \frac{A_{RING_i}^2}{N_i} P_{iJ} \left(1 - P_{iJ}\right)$$

$$SD_J = \sqrt{\sum_i \frac{\overline{V}_i \, \overline{V}_{\bar{i}}}{N_i}}$$

COMPLEMENTARY PROCESSES