Рассмотрим последовательность с вкраплениями, задаваемую следующим образом:

$$1 - \nu_1,$$
$$...,$$
$$k - \nu_k$$

где τ_s - длина серии, а ν_s - количество серий длины τ_s Тогда контейнер Y примет вид:

$$y_1, ...y_T = y_{\nu_{s_1}1}, ..., y_{\nu_{s_1}s_1}, ...y_{\nu_{s_k}1}, ..., y_{\nu_{s_k}s_k}, \tag{1}$$

где $\sum\limits_{s=1}^{k} s\nu_s = T$

Рассмотрим случай когда $y_1 \neq y_2$:

$$P\{y_{\nu_{s_1}1}, ..., y_{\nu_{s_1}s_1}, ...y_{\nu_{s_k}1}, ..., y_{\nu_{s_k}s_k} | \gamma_{\nu_{s_1}1} = 0, ..., \gamma_{\nu_{s_1}s_1} = 0, ...\gamma_{\nu_{s_k}1} = 0, ..., \gamma_{\nu_{s_k}s_k} = 0\} =$$
$$\frac{1}{2}\left(\frac{1}{2}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s - 1}\right)\left(\frac{1}{2}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s}\right) = \frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s - 1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s}$$

$$P\{y_{\nu_{s_1}1}, ..., y_{\nu_{s_1}s_1}, ..., y_{\nu_{s_j}1}, ..., y_{\nu_{s_j}s_j}, y_{\nu_{s_k}1}, ..., y_{\nu_{s_k}s_k} |$$
$$\gamma_{\nu_{s_1}1} = 0, ..., \gamma_{\nu_{s_1}s_1} = 0, ..., \gamma_{\nu_{s_j}1} = 1, ..., \gamma_{\nu_{s_j}s_j} = 0, ...\gamma_{\nu_{s_k}1} = 0, ..., \gamma_{\nu_{s_k}s_k} = 0\} =$$
$$= \frac{1}{2^{T+1}}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s - 1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s + 1}, 1 < j < k$$

$$P\{y_{\nu_{s_1}1}, ..., y_{\nu_{s_1}s_1}, ..., y_{\nu_{s_j}1}, ..., y_{\nu_{s_j}s_j}, y_{\nu_{s_k}1}, ..., y_{\nu_{s_k}s_k} |$$
$$\gamma_{\nu_{s_1}1} = 0, ..., \gamma_{\nu_{s_1}s_1} = 0, ..., \gamma_{\nu_{s_j}1} = 1, ..., \gamma_{\nu_{s_j}s_j} = 0, ...\gamma_{\nu_{s_k}1} = 0, ..., \gamma_{\nu_{s_k}s_k} = 0\} =$$
$$= \frac{1}{2^{T+1}}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s - 1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s + 1}, 1 < j < k$$

$$P\{y_{\nu_{s_1}1}, ..., y_{\nu_{s_1}s_1}, ..., y_{\nu_{s_j}1}, ..., y_{\nu_{s_j}s_j}, y_{\nu_{s_k}1}, ..., y_{\nu_{s_k}s_k} |$$
$$\gamma_{\nu_{s_1}1} = 0, ..., \gamma_{\nu_{s_1}s_1} = 0, ..., \gamma_{\nu_{s_j}1} = 0, ..., \gamma_{\nu_{s_j}i} = 1, ...\gamma_{\nu_{s_j}s_j} = 0, ...\gamma_{\nu_{s_k}1} = 0, ..., \gamma_{\nu_{s_k}s_k} = 0\} =$$
$$= \frac{1}{2^{T+1}}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s - 2}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s}(1+\varepsilon^2), 1 < j < k, 1 < i < j$$

$$P\{y_{\nu_{s_1}1}, ..., y_{\nu_{s_1}s_1}, ...y_{\nu_{s_k}1}, ..., y_{\nu_{s_k}s_k} | \gamma_{\nu_{s_1}1} = 1, ..., \gamma_{\nu_{s_1}s_1} = 0, ...\gamma_{\nu_{s_k}1} = 0, ..., \gamma_{\nu_{s_k}s_k} = 0\} =$$
$$= \frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s - 1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s - 1}$$

$$P\{y_{\nu_{s_1}1}, ..., y_{\nu_{s_1}s_1}, ...y_{\nu_{s_k}1}, ..., y_{\nu_{s_k}s_k} | \gamma_{\nu_{s_1}1} = 0, ..., \gamma_{\nu_{s_1}s_1} = 0, ...\gamma_{\nu_{s_k}1} = 0, ..., \gamma_{\nu_{s_k}s_k} = 1\} =$$
$$= \frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s - 1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s - 1}$$

Рассмотрим случай когда $y_1 = y_2$:

$$P\{y_{\nu_{s_1}1},...,y_{\nu_{s_1}s_1},...y_{\nu_{s_k}1},...,y_{\nu_{s_k}s_k}|\gamma_{\nu_{s_1}1}=0,...,\gamma_{\nu_{s_1}s_1}=0,...\gamma_{\nu_{s_k}1}=0,...,\gamma_{\nu_{s_k}s_k}=0\} =$$
$$= \frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1}$$

$$P\{y_{\nu_{s_1}1},...,y_{\nu_{s_1}s_1},...,y_{\nu_{s_j}1},...,y_{\nu_{s_j}s_j},y_{\nu_{s_k}1},...,y_{\nu_{s_k}s_k}|$$
$$\gamma_{\nu_{s_1}1}=0,...,\gamma_{\nu_{s_1}s_1}=0,...,\gamma_{\nu_{s_j}1}=1,...,\gamma_{\nu_{s_j}s_j}=0,...\gamma_{\nu_{s_k}1}=0,...,\gamma_{\nu_{s_k}s_k}=0\} =$$
$$= \frac{1}{2^{T+1}}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s+1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1}, 1<j<k$$

$$P\{y_{\nu_{s_1}1},...,y_{\nu_{s_1}s_1},...,y_{\nu_{s_j}1},...,y_{\nu_{s_j}s_j},y_{\nu_{s_k}1},...,y_{\nu_{s_k}s_k}|$$
$$\gamma_{\nu_{s_1}1}=0,...,\gamma_{\nu_{s_1}s_1}=0,...,\gamma_{\nu_{s_j}1}=0,...,\gamma_{\nu_{s_j}s_j}=1,...\gamma_{\nu_{s_k}1}=0,...,\gamma_{\nu_{s_k}s_k}=0\} =$$
$$= \frac{1}{2^{T+1}}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-2}, 1<j<k$$

$$P\{y_{\nu_{s_1}1},...,y_{\nu_{s_1}s_1},...,y_{\nu_{s_j}1},...,y_{\nu_{s_j}s_j},y_{\nu_{s_k}1},...,y_{\nu_{s_k}s_k}|$$
$$\gamma_{\nu_{s_1}1}=0,...,\gamma_{\nu_{s_1}s_1}=0,...,\gamma_{\nu_{s_j}1}=0,...,\gamma_{\nu_{s_j}i}=1,...\gamma_{\nu_{s_j}s_j}=0,...\gamma_{\nu_{s_k}1}=0,...,\gamma_{\nu_{s_k}s_k}=0\} =$$
$$= \frac{1}{2^{T+1}}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1}(1+\varepsilon^2), 1<j<k, 1<i<j$$

$$P\{y_{\nu_{s_1}1},...,y_{\nu_{s_1}s_1},...y_{\nu_{s_k}1},...,y_{\nu_{s_k}s_k}|\gamma_{\nu_{s_1}1}=1,...,\gamma_{\nu_{s_1}s_1}=0,...\gamma_{\nu_{s_k}1}=0,...,\gamma_{\nu_{s_k}s_k}=0\} =$$
$$= \frac{1}{2^T+1}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1}$$

$$P\{y_{\nu_{s_1}1},...,y_{\nu_{s_1}s_1},...y_{\nu_{s_k}1},...,y_{\nu_{s_k}s_k}|\gamma_{\nu_{s_1}1}=0,...,\gamma_{\nu_{s_1}s_1}=1,...\gamma_{\nu_{s_k}1}=0,...,\gamma_{\nu_{s_k}s_k}=0\} =$$
$$= \frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1}$$

$$P\{y_{\nu_{s_1}1},...,y_{\nu_{s_1}j},...,y_{\nu_{s_1}s_1},...y_{\nu_{s_k}1},...,y_{\nu_{s_k}s_k}|\gamma_{\nu_{s_1}1}=0,...,\gamma_{\nu_{s_1}j}=1,...,\gamma_{\nu_{s_1}s_1}=0,...\gamma_{\nu_{s_k}1}=0,...,\gamma_{\nu_{s_k}s_k} =$$
$$= \frac{1}{2^T+1}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s+1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1}, 1<j<s_1$$

Тогда

$$P\{Y|w(\gamma)=0\} = \frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s} + \frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1} =$$
$$\frac{1}{2^{T-1}}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1}, w(\gamma) = \sum_{i=1}^{T}\gamma_i - \text{вес Хемминга}$$

$$P\{Y|w(\gamma)=1\} = \frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1-2}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-2}\big(-\frac{3}{2}\varepsilon^4-\frac{5}{2}\varepsilon^3-\frac{5}{2}\varepsilon^2+\frac{3}{2}\varepsilon+7\big)$$

Отсюда

$$P\{Y\} = P\{Y|w(\gamma)=0\}+\delta P\{Y|w(\gamma)=1\} = \frac{1}{2^{T-1}}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-1}+$$

$$\delta\Bigg(\frac{1}{2^T}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1-2}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-2}\big(-\frac{3}{2}\varepsilon^4-\frac{5}{2}\varepsilon^3-\frac{5}{2}\varepsilon^2+\frac{3}{2}\varepsilon+7\big)\Bigg)=$$

$$\frac{1}{2^T-1}(1+\varepsilon)^{T-\sum\limits_{s=1}^{k}\nu_s-1-2}(1-\varepsilon)^{\sum\limits_{s=1}^{k}\nu_s-2}\Bigg((1+\varepsilon)(1-\varepsilon)-\delta\big(\frac{3}{4}\varepsilon^4+\frac{5}{4}\varepsilon^3+\frac{5}{4}\varepsilon^2-\frac{3}{4}\varepsilon-\frac{7}{2}\big)\Bigg)$$