$$\Psi\left(\text{configuration } 1\right) - \Psi\left(\text{configuration } 0\right) = \sum_{j=0}^{k} f(i) w(i,r)$$

$$w(i,r) = \psi(i+1,r-1) - \psi(i,r-1) = \frac{1}{2^{r-1}} \begin{pmatrix} r-1 \\ k-i \end{pmatrix}$$