$$af_{g,tf} = \sum_{r \in R_g} \frac{af_{r,tf}}{ml_{tf}} \cdot \begin{cases} A_r \cdot e^{-\frac{d_{r,g}}{d_0}}, & \text{if } d_{r,g} \leq 2500bp \\ A_{r,g}, & \text{otherwise} \end{cases}$$

$af_{g,tf}$: affinity score of TF *tf* to *g*
R_g: set of regions mapped to *g*
$af_{r,tf}$: affinity of *tf* in *r*
ml_{tf}: motif length of *tf*
A_r : activity of *r*
$A_{r,g}$: adapted activity of *r* to *g*
$d_{r,g}$: distance of *r* to *g*
d_0: distance constant of 5000 bp