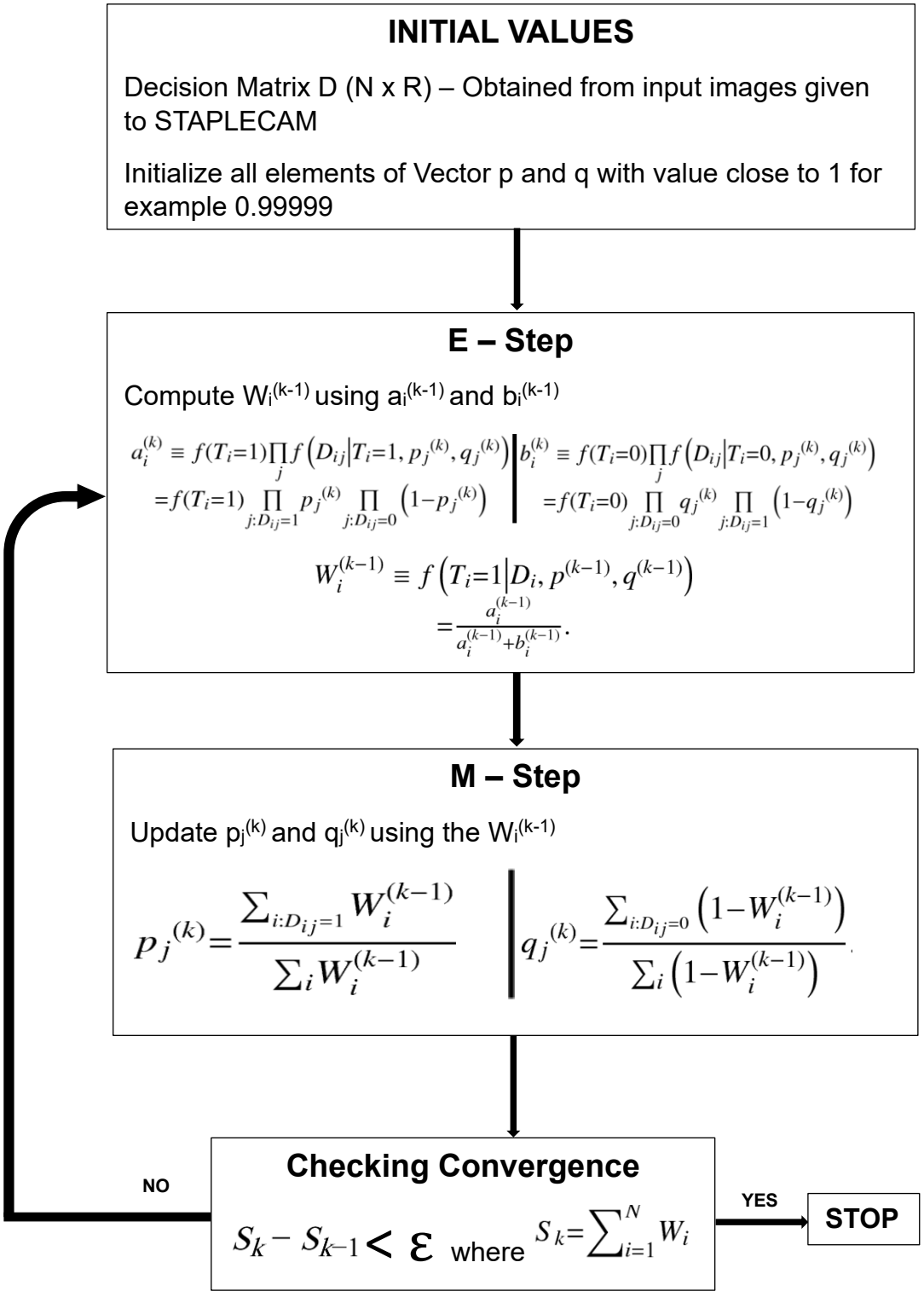
INITIAL VALUES
Decision Matrix D (N x R) – Obtained from input images given to STAPLECAM
Initialize all elements of Vector p and q with value close to 1 for example 0.99999
E – Step
Compute $W_i^{(k-1)}$ using $a_i^{(k-1)}$ and $b_i^{(k-1)}$
$a_i^{(k)} \equiv f(T_i=1)\prod_j f\left(D_{ij}\middle|T_i=1, p_j^{(k)}, q_j^{(k)}\right) = f(T_i=1)\prod_{j:D_{ij}=1} p_j^{(k)} \prod_{j:D_{ij}=0}\left(1-p_j^{(k)}\right)$
$b_i^{(k)} \equiv f(T_i=0)\prod_j f\left(D_{ij}\middle|T_i=0, p_j^{(k)}, q_j^{(k)}\right) = f(T_i=0)\prod_{j:D_{ij}=0} q_j^{(k)} \prod_{j:D_{ij}=1}\left(1-q_j^{(k)}\right)$
$W_i^{(k-1)} \equiv f\left(T_i=1\middle|D_i, p^{(k-1)}, q^{(k-1)}\right) = \frac{a_i^{(k-1)}}{a_i^{(k-1)}+b_i^{(k-1)}}.$
M – Step
Update $p_j^{(k)}$ and $q_j^{(k)}$ using the $W_i^{(k-1)}$
$p_j^{(k)} = \frac{\sum_{i:D_{ij}=1} W_i^{(k-1)}}{\sum_i W_i^{(k-1)}}$
$q_j^{(k)} = \frac{\sum_{i:D_{ij}=0}\left(1-W_i^{(k-1)}\right)}{\sum_i\left(1-W_i^{(k-1)}\right)}$
Checking Convergence
$S_k - S_{k-1} < \varepsilon$ where $S_k = \sum_{i=1}^{N} W_i$
NO
YES
STOP