Input: sequences X, Y, Z

foreach $n^{(X)} \in \mathscr{F}^{(X)}$ **do** /* inside→outside sorted */

    foreach $n^{(Y)} \in \mathscr{F}^{(Y)}$ **do** /* inside→outside sorted */

        foreach $n^{(Z)} \in \mathscr{F}^{(Z)}$ **do** /* inside→outside sorted */

            foreach *state* $\boldsymbol{a}$ **do**

                bifurcProb $\leftarrow 0$;

                foreach $\left(n_L^{(X)}, n_R^{(X)}\right) \in b_{in}\left(n^{(X)}\right)$ **do**

                    foreach $\left(n_L^{(Y)}, n_R^{(Y)}\right) \in b_{in}\left(n^{(Y)}\right)$ **do**

                        foreach $\left(n_L^{(Z)}, n_R^{(Z)}\right) \in b_{in}\left(n^{(Z)}\right)$ **do**

                            bifurcProb $+=$ calcLBifurcProb $\left(\boldsymbol{a}; \cdot\right)$;

                            bifurcProb $+=$ calcRBifurcProb $\left(\boldsymbol{a}; \cdot\right)$;

                        end

                    end

                end

                $\alpha_{\boldsymbol{a}}\left(n^{(X)}, n^{(Y)}, n^{(Z)}\right) \leftarrow$ calcTransEmitProb $\left(\boldsymbol{a}; n^{(X)}, n^{(Y)}, n^{(Z)}\right)$;

                $\alpha_{\boldsymbol{a}}\left(n^{(X)}, n^{(Y)}, n^{(Z)}\right) +=$ bifurcProb ;

                store $\alpha_{\boldsymbol{a}}\left(n^{(X)}, n^{(Y)}, n^{(Z)}\right)$;

            end

        end

    end

end

return $\alpha_{\boldsymbol{a}}\left(n^{(X)}[0, L^{(X)}], n^{(Y)}[0, L^{(Y)}], n^{(Z)}[0, L^{(Z)}]\right)$;