1. Derivation of the Correction Propagation Algorithm in Eq. (33)

Solution:

By substituting Eq. (32) into Eq. (29) in the paper, we obtain

\[
Y_u^+ = \Gamma_{uu}^\dagger (W_u l Y_l + wZ_{us} Y_s) = (\Gamma_{uu} - \Gamma_{uk}(I_{N_s}/w + \Gamma_{kk})^{-1}\Gamma_{ku}) W_u l Y_l + w(\Gamma_{uu} - \Gamma_{uk}(I_{N_s}/w + \Gamma_{kk})^{-1}\Gamma_{ku}) Z_{us} Y_s
\]  

(1)

Since \( w \to +\infty \), the first term can be computed as

\[
(\Gamma_{uu} - \Gamma_{uk}(I_{N_s}/w + \Gamma_{kk})^{-1}\Gamma_{ku}) W_u l Y_l\]

(2)

The second term can be calculated as

\[
w(\Gamma_{uu} - \Gamma_{uk}(I_{N_s}/w + \Gamma_{kk})^{-1}\Gamma_{ku}) Z_{us} Y_s
\]  

(3)

Therefore,

\[
w(\Gamma_{uu} - \Gamma_{uk}(I_{N_s}/w + \Gamma_{kk})^{-1}\Gamma_{ku}) Z_{us} Y_s = w\Gamma_{uu} Z_{us} Y_s - w\Gamma_{uk}(I_{N_s}/w + \Gamma_{kk})^{-1}\Gamma_{ku} Z_{us} Y_s
\]  

(4)

Substituting Eq. (2) into Eq. (3) yields

\[
Y_u^+ = Y_u - \Gamma_{uk} \Gamma_{kk}^{-1} Y_s + \Gamma_{uk} \Gamma_{kk}^{-1} Y_s = Y_u + \Gamma_{uk} \Gamma_{kk}^{-1} (Y_s - Y_k).
\]  

Hereby, we finish the solution.