





where  $\delta_{ij}$  is the Kronecker delta. Using this result and the properties of the Lorentzian  $g(\cdot)$  one can show that

$$\begin{aligned} g(\cdot) &= C_0 + \sum_{q=1}^n C_q \{ [g(y, t)]^q + [g^-(y, t)]^q \} \\ &= C_0 + \sum_{q=1}^n C_q \{ [z(y, t)]^q + [\bar{z}(y, t)]^q \} \end{aligned} \quad (15)$$

Thus

$$I(x, t) = \int_0^L K(x-y) H(z(y, t); n) dy \quad (16)$$

where

$$H(z; n) = a_n \left\{ C_0 + \sum_{q=1}^n C_q (z^q + \bar{z}^q) \right\} \quad (17)$$

(It can be shown that for impulsive coupling,  $H(z; \infty) = (1 - |z|^2)/(1 + z + \bar{z} + |z|^2)$ .)



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