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Response of traveling waves to transient inputs in neural fields

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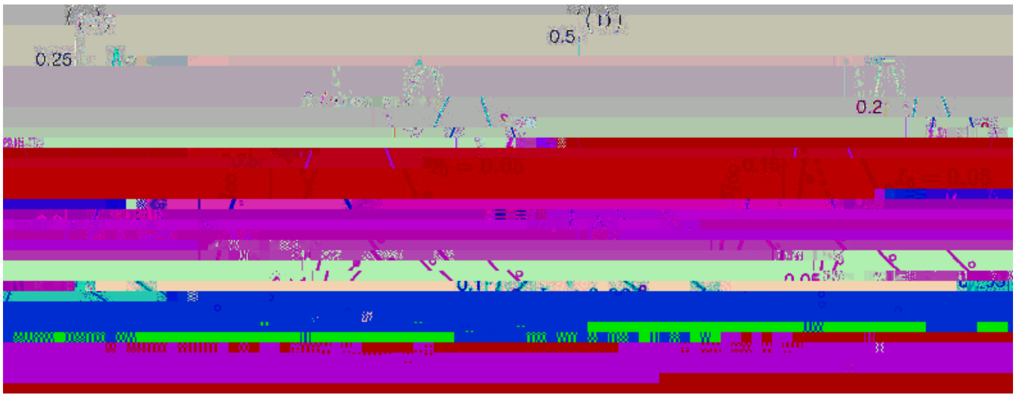
A. Wave response function: Adjoint

$(I(,t) = 0)$, ( ) $u(,t) = U(\quad ct)$ c, ( ) $f \in C$ $f'' > 0$, ( ) $u + f(u)$ $u_0 < u < u$ u_0, ( ) $w \in C$ $\int_{-\infty}^{\infty} w( )d < \infty$. ( ) ( ) ( ) ( ) 0. $u(,t) =$ $U( )$, $= \quad ct$, $I(,t) = 0$,

$$cU = U + \int_{-\infty}^{\infty} w( ) f U( ) d . \qquad ( )$$

( ). $0 < I(,t)$, $I(,t) =$i8203 0151(30 0 1 scn (11.58141.358 TD 0.0592 90.610< - (o.4177 -1()] w 9 0 . 4 9 9 6 =



Δ,

∈ (Δ,),

$$cU = U + A \int_{\Delta} (\;)d \quad (\;)$$

( )

$$U(\;) = \frac{c + \Delta + \Delta}{c +}.$$

( )

$U(\; \Delta) = U(\;) =$,

( ) c Δ

$$\frac{A \; \Delta \; \Delta \; c \; \Delta}{c +} = , \quad (\;)$$

$$\frac{A \; \Delta \; \Delta + \; + c \; \Delta +}{c +} = . \quad (\;)$$

( ) ( ),

$$\frac{A(\; \Delta \;)}{c +}(\; c \;) = 0.$$

Δ =

$Be^{/c}$

$$V( ) = H(+) + e^{/c} + e^{/c} + e^{(+)/c} + H(+ \Delta) + e^{/c} + e^{/c} + e^{(\Delta)/c}.$$

= Δ =

$$e^{n/c} = - \frac{}{c}.$$

$n=$

$$c\, C( )(+) + c\, C(\Delta)(+ \Delta) = 0,$$

$$C( ) = \frac{c}{\Delta}(+ \Delta)$$

$$C(\Delta) = \frac{c}{\Delta}(\Delta +).$$

=

$$V( ) = H(+) + \frac{(/c)}{} e^{(+)/c}$$

$$H(+ \Delta) + \frac{(/c)}{} e^{(\Delta)/c}.$$

$I(,t) = I_0 (t),$

$$\infty = \frac{I_0 V( )d}{\frac{dU( )}{d} V( )d} = 0, \quad ( )$$

( ), ( )

$$\infty = I_0 \frac{\mathcal{P}_+(p) \mathcal{P}(p)}{A (\Delta)} \quad (0)$$

$$\mathcal{P}_+(p) = \begin{cases} \mathcal{H}_+ e^{(+ p)/c}, & p > \Delta \\ \mathcal{H} e^{(+ p)/c} + \mathcal{E}( ), & p < \Delta \end{cases}$$

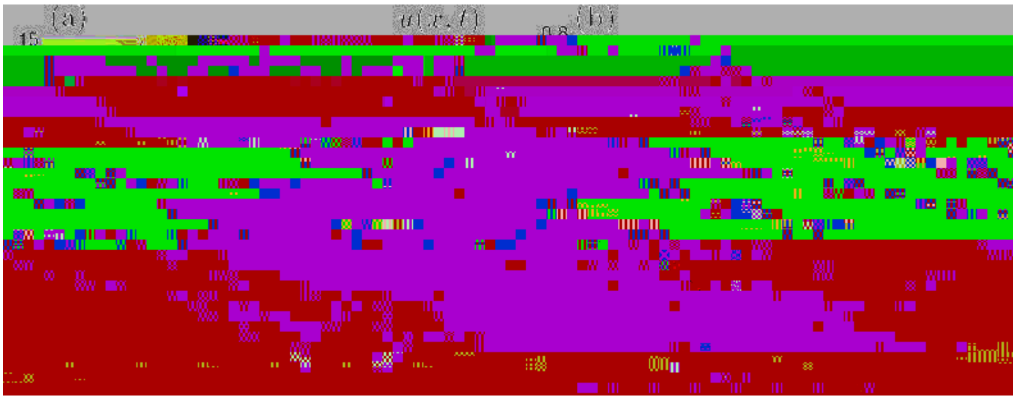
$$\mathcal{P}(p) = \begin{cases} \mathcal{H}_+ e^{(\Delta p)/c}, & p > p_+ \\ \mathcal{H} e^{(\Delta p)/c} + \mathcal{E}(\Delta), & p \in (p , p_+) \\ \mathcal{H} e^{(\Delta p)/c}, & p < p , \end{cases}$$

$p = \Delta \Delta$

$$\mathcal{H} = \frac{}{c} \frac{\Delta}{c},$$

$$\mathcal{E}( ) = e^{(p \Delta)/c}.$$

0 T0 0.



( ) ( ). $I(\ ,t) = I_0\ (t\ \ t_p)$. ( ) $u(\ ,t)$ $t_p =$

[illegible]

$$I_0 = A \ldots$$

[illegible]

$$I(,t) = I_0(t)H(+ \Delta_I),$$

[illegible]

$$I_0 > A \ldots$$

[illegible]

$$\Delta_I = \Delta_s \quad \Delta_u = \ldots (/A) \ldots$$

[illegible]

V. CONCLUSION

[illegible]

... *in vivo* ...

ACKNOWLEDGMENTS

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