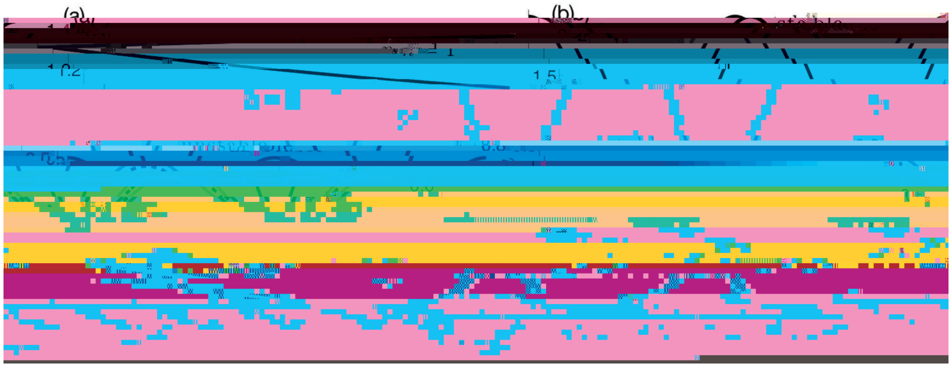
. 12, . 1, . . . 61 4

Zacha y P. Kil a ick[†] and Ba d E e

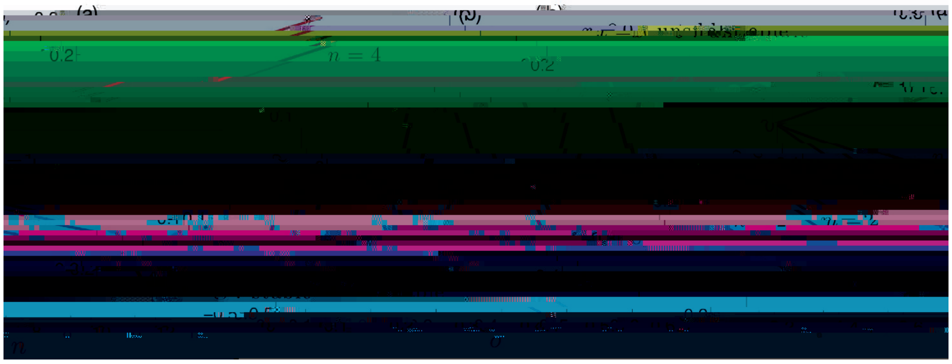


1. *Input-locked bumps in the deterministic neural field* (1.1) *with input* (2.3)*.* (a) *The bump half-width* *for a unimodal (* = 1*) and bimodal (* = 2*) input calculated using* (2.7) *and*

, 10, 33, … (1.2). …),

$$(2.10)$$

… (.14). … fi … $\to 0$ … $\to 0$. … fi … (1.). … 2 … (2.10)



4. *Eigenvalue* λ_o

3.1. [illegible] (1.) [illegible] 14 [illegible] 1 [illegible] 14, 12

Δ( ), fi Δ( ) fi ff ( )

(3.) Δ( ) $^{1/2}$ $\int_{-\pi}^{\pi}$ ( ) ( ) / $\int_{-\pi}^{\pi}$ ( ) ′( )

(3.) ff ff (Δ( ) 0) (( ) 0). Δ( ), fi ff

Δ( )^2 $\int_{-\pi}^{\pi}\int_{-\pi}^{\pi}$ ( ) ( ) ( ) ( ) / [$\int_{-\pi}^{\pi}$ ( ) ′( )]^2

(3.) Δ( )^2 ( )

fi ( ) (1.)

(3.) ( ) $\int_{-\pi}^{\pi}\int_{-\pi}^{\pi}$ ( ) ( ) (−) / [$\int_{-\pi}^{\pi}$ ( ) ′( )]^2

3.3.

(1.3). (3.1) (2.14) $\Delta(\ ) = O(\ ^{1/2})$

$$\Phi(\ ) = L\Phi(\ ) + \ ^{1/2}\ '(\ )\Delta(\ ) + \ (\ ) + \ ^{1/2}\ (\ )\Delta(\ ) \quad 2$$

(1.3

(1.3)

4.

3.

4.1.

(4.1)

(3.1)

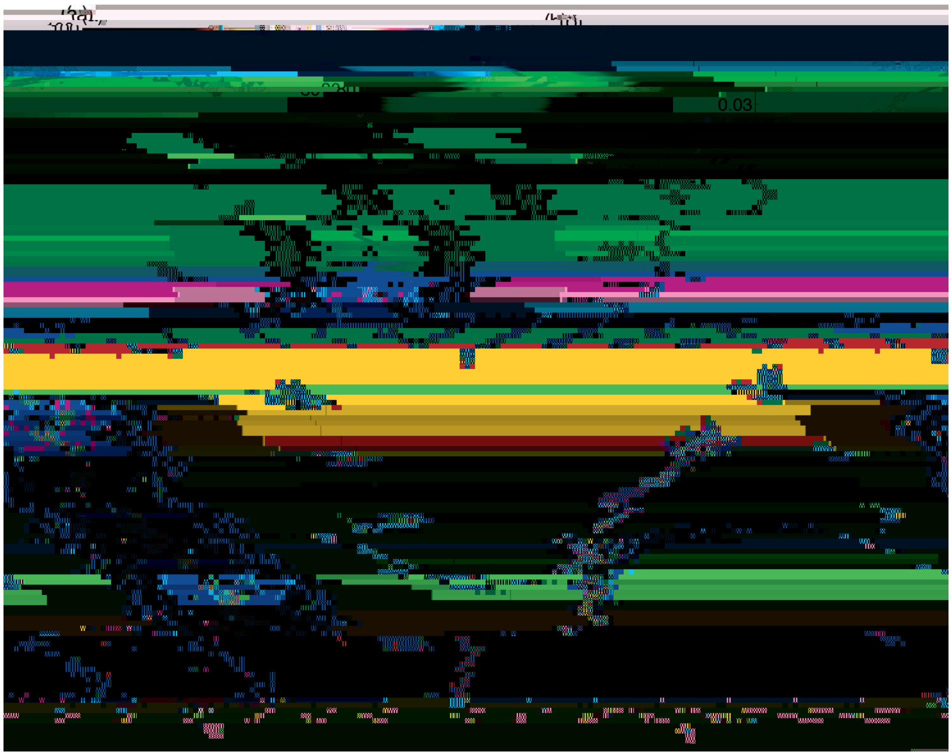
(4.2)

. *Bumps pinned by stationary inputs* (2.3) *in the stochastic neural field* (1.7)

(3.20) … *switch* … 3 …

4.

(1.2) … (4.1) … (4.3) …



. *Pinning of bumps in the network* (1.7) *with synaptic weight* (1.4) *for low frequency synaptic heterogeneity.* (a) *Numerical simulation of* (1.7) *using synaptic weight* (1.4) *for* = 2, σ = 0.1, *and* ε = 0.01 *shows that the bump remains pinned to the stable attractor at* = 0. (b) *The variance of the bump's position plotted against time computed numerically (red dashed) across* 1000 *realizations saturates after a moderate amount of time when* = 2, *as predicted by the Ornstein–Uhlenbeck approximation* (3.20) *(blue solid).* (c) *Numerical simulation for* = 3, σ = 0.1, *and* ε = 0.01 *shows that the bump remains pinned to the stable location at* = 0. (d) *The variance of the bump's position plotted against time computed numerically (r5.3(ti)-10.5F9(t)3.nwh*

(.14) $$\int^{\pi}_{\pi}$$

-1]

(2.2) (.22)

1, 20, 33. (.22)

(.)

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