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 ${\rm X.\ X.\ First\ author}^1, {\rm\ X.\ Second\ author}^2}$ and

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1. Insert A head here

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(a) Insert B head here

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2. Equations

Sample equations.

$$\frac{\partial u(t,x)}{\partial t} = Au(t,x) \left(1 - \frac{u(t,x)}{K} \right) - B \frac{u(t-\tau,x)w(t,x)}{1 + Eu(t-\tau,x)},$$

$$\frac{\partial w(t,x)}{\partial t} = \delta \frac{\partial^2 w(t,x)}{\partial x^2} - Cw(t,x) + D \frac{u(t-\tau,x)w(t,x)}{1 + Eu(t-\tau,x)},$$
(2.1)

$$\frac{dU}{dt} = \alpha U(t)(\gamma - U(t)) - \frac{U(t - \tau)W(t)}{1 + U(t - \tau)},$$

$$\frac{dW}{dt} = -W(t) + \beta \frac{U(t - \tau)W(t)}{1 + U(t - \tau)}.$$
(2.2)

$$\frac{\partial(F_1, F_2)}{\partial(c, \omega)} \Big|_{(c_0, \omega_0)} = \begin{vmatrix} \frac{\partial F_1}{\partial c} & \frac{\partial F_1}{\partial \omega} \\ \frac{\partial F_2}{\partial c} & \frac{\partial F_2}{\partial \omega} \end{vmatrix}_{(c_0, \omega_0)}$$

$$= -4c_0q\omega_0 - 4c_0\omega_0p^2 = -4c_0\omega_0(q + p^2) > 0. \quad (2.3)$$

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3. Enunciations

Theorem 3.1. Assume that $\alpha > 0, \gamma > 1, \beta > \frac{\gamma+1}{\gamma-1}$. Then there exists a small $\tau_1 > 0$, such that for $\tau \in [0, \tau_1)$, if c crosses $c(\tau)$ from the direction of to a small amplitude periodic traveling wave solution of (2.1), and the period of $(\check{u}^p(s), \check{w}^p(s))$ is

$$\check{T}(c) = c \cdot \left[\frac{2\pi}{\omega(\tau)} + O(c - c(\tau)) \right].$$

Condition 3.1. From (0.8) and (2.10), it holds $\frac{d\omega}{d\tau} < 0$, $\frac{dc}{d\tau} < 0$ for $\tau \in [0, \tau_1)$. This fact yields that the system (2.1) with delay $\tau > 0$ has the periodic traveling waves for smaller wave speed c than that the system (2.1) with $\tau = 0$ does. That is, the delay perturbation stimulates an early occurrence of the traveling waves.

4. Figures & Tables

The output for figure is:

Figure 1. Insert figure caption here

The output for table is:

Table 1. An Example of a Table

date	Dutch policy	date	European policy
1988	Memorandum Prevention	1985	European Directive (85/339)
1991–1997	Packaging Covenant I		
1994	Law Environmental Management	1994	European Directive (94/62)
1997	Agreement Packaging and Packaging Waste		
1998-2002	Packaging Covenant II		
2003-2005	Packaging Covenant III		
2006–2007	Decree on Packaging and paper		

5. Conclusion

The conclusion text goes here.

Acknowledgment

Insert the Acknowledgment text here.

References

- 1. Allwood JM, Cullen JM. 2011 *Sustainable materials: with both eyes open*. Cambridge, UK: UIT Cambridge. See http://www.withbotheyesopen.com.
- 2. MacKay DJC. 2008 Sustainable energy: without the hot air. Cambridge, UK: UIT Cambridge. See http://www.withouthotair.com.
- 3. Gallman PG. 2011 *Green alternatives and national energy strategy: the facts behind the headlines*. Baltimore, MD: Johns Hopkins University Press.
- 4. MacKay DJC. 2013. Solar energy in the context of energy use, energy transportation, and energy storage. *Proc. R. Soc. A* **371**.