RESEARCH ARTICLE

How to use the Development (DEV) LaTeX class

First author[1] and Second author[2]

ABSTRACT

This sample is a guideline for preparing technical papers using LaTeX for DEV manuscript submission. It contains the documentation for COB LaTeX class file, which implements the layout of the manuscript for DEV journal. This sample file uses a class file named `COB.cls` where the authors should use during their manuscript preparation.

KEYWORDS: keyword entry 1, keyword entry 2, keyword entry 3

INSERT A HEAD HERE

This demo file is intended to serve as a "starter file" for Development papers produced under LaTeX using COB.cls.

Insert B head here

Subsection text here.

Insert C head here

Subsubsection text here.

EQUATIONS

Sample equations.

$$\begin{aligned}\frac{\partial u(t,x)}{\partial t} &= Au(t,x)\left(1-\frac{u(t,x)}{K}\right)\\ &\quad -B\frac{u(t-\tau,x)w(t,x)}{1+Eu(t-\tau,x)},\\ \frac{\partial w(t,x)}{\partial t} &= \delta\frac{\partial^2 w(t,x)}{\partial x^2}-Cw(t,x)\\ &\quad +D\frac{u(t-\tau,x)w(t,x)}{1+Eu(t-\tau,x)},\end{aligned} \tag{1}$$

$$\begin{aligned}\frac{dU}{dt} &= \alpha U(t)(\gamma-U(t))-\frac{U(t-\tau)W(t)}{1+U(t-\tau)},\\ \frac{dW}{dt} &= -W(t)+\beta\frac{U(t-\tau)W(t)}{1+U(t-\tau)}.\end{aligned} \tag{2}$$

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

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

ENUNCIATIONS

Theorem 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 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.*

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

Remark 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.*

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

Lemma 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.*

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

Proposition 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.*

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

FIGURES & TABLES

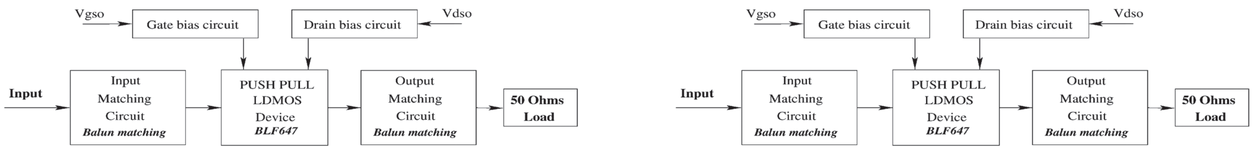
The output for figure is:

An example of a double column floating figure using two subfigures. (The subfig.sty package was already included in the class file.) The subfigure `\label` commands are set within each subfloat command, the `\label` for the overall figure must come after

[1]First author address
[2]Second author address

Authors for correspondence: (xxxx@xxxx.xxx.xx; xxxx@xxxx.xxx.xx)

Received 1 May 2018; revised 5 December 2018



(a) Case I (b) Case II

Fig. 1. Sample sub figures in LaTeX

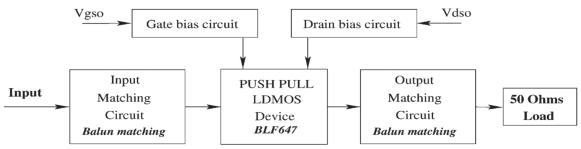


Fig. 2. Insert figure caption here

`\caption`. `\hfil` must be used as a separator to get equal spacing. The subfigure.sty package works much the same way, except `\subfigure` is used instead of `\subfloat`.

The output for table is:

Table 1. An Example of a Table

Head 1	Head 2	Head 3	Head 4	Head 5
One	Two	Three	Four	Five
Six	Seven	Eight	Nine	Ten

CONCLUSION

The conclusion text goes here.

Acknowledgements

Insert the Acknowledgment text here.

Competing interests

Insert the Competing interests text here.

Contribution

Insert the Contribution text here.

Funding

Insert the Funding interests text here.

Data availability

Insert the Data availability text here.

Supplementary

Insert the supplementary text text here.

REFERENCES

Arendt, D., Musser, J. M., Baker, C. V., Bergman, A., Cepko, C., Erwin, D. H., Pavlicev, M., Schlosser, G., Widder, S., Laubichler, M. D. et al. (2016). The origin and evolution of cell types. *Nat. Rev. Genet*. 17, 744–757.

Ben-Tabou de-Leon, S. B. and Davidson, E. H. (2010). Information processing at the foxa node of the sea urchin endomesoderm specification network. *Proc. Natl Acad. Sci*. USA 107, 10103–10108.

Calestani, C. and Rogers, D. J. (2010). Cis-regulatory analysis of the sea urchin pigment cell gene polyketide synthase. *Dev. Biol.* 340, 249–255.

Cameron, R. A. and Davidson, E. H. (1991). Cell type specification during sea urchin development. *Trends Genet.* 7, 212–218.

Cameron, R. A., Hough-Evans, B. R., Britten, R. J. and Davidson, E. H. (1987). Lineage and fate of each blastomere of the eight-cell sea urchin embryo. *Genes Dev.* 1, 75–85.

Croce, J. C. and McClay, D. R. (2010). Dynamics of Delta/Notch signaling on endomesoderm segregation in the sea urchin embryo. *Development* 137, 83–91.