

# Table of Contents

A Meaningless Paper Containing Something .....	1
<i>Kate Davies and William Jones</i>	
Title of Your Paper .....	4
<i>First Author, Second Author, Third Author</i>	
How to Insert Figures/Graphics into L <sup>A</sup> T <sub>E</sub> X Documents .....	5
<i>K. Palágyi</i>	



# A Meaningless Paper Containing Something

Kate Davies<sup>1</sup> and William Jones<sup>2</sup>

<sup>1</sup> Princeton University, Princeton NJ 076433, USA  
Davies@princeton.edu

<sup>2</sup> Image Processing Group, Yale University, New Heaven, CT 0625-3486  
Jones@yale.edu

**Abstract.** This paper is to present some elements of L<sup>A</sup>T<sub>E</sub>X documents, including defining new theorem-like environment, using equation, using citation, and inserting table.

## 1 Introduction

Consider an integrable two-variable function on  $\mathbb{R}^2$ . Its *horizontal* and *vertical projections* are defined by its integrals along each horizontal and vertical line, respectively [4]. The *reconstruction problem* of a function from its two projections can be defined for different classes of functions [1, 3].

Equivalently, the non-negativity of the projections  $f_x$  and  $f_y$  means that  $d$  should be small enough, that is,

$$d \leq d_0, \tag{1}$$

where

$$d_0 = \min\left\{\inf_{[0,b]} \left\{\frac{g_x(y)}{a}\right\}, \inf_{[0,a]} \left\{\frac{g_y(x)}{b}\right\}\right\}. \tag{2}$$

Therefore, the existence of the function  $g$  (or equivalently  $\bar{g}$ ) is equivalent to  $c \geq c_0$ , where

$$c_0 = \max_{y>0} \left\{\frac{\bar{G}_{xy}^{-1}(y)}{\bar{G}_{yx}^{-1}(y)}\right\}. \tag{3}$$

**Theorem 1.** *Let  $g_x(y)$  and  $g_y(x)$  be integrable functions on intervals  $[0, b]$  and  $[0, a]$ , respectively, such that they have the same finite integrals. For any  $d \leq d_0$  there is a real number  $c_0$  such that if  $c \geq c_0$  then there is a solution having projections  $g_x(y)$ ,  $g_y(x)$  and having the range of  $\{d, c + d\}$ .*

**Algorithm 1.** for reconstructing a two-valued function  $g(x, y)$  from  $g_x(y)$  and  $g_y(x)$ :

*Step 1.* Select an arbitrary (small) real number  $d$  such that  $d \leq d_0$  where  $d_0$  is given by (2).

*Step 2.* Subtract the values  $ad$  and  $bd$  from the function-pair  $g_x$  and  $g_y$ , respectively, getting a new function-pair  $\bar{g}_x(y) = g_x(y) - ad$  and  $\bar{g}_y(x) = g_y(x) - bd$ .

*Step 3.* Select an arbitrary (big) real number  $c$  such that  $c \geq c_0$  where  $c_0$  is given by (3).

*Step 4.* Divide the function-pair  $\bar{g}_x$  and  $\bar{g}_y$  by  $c$ . In this way we have a newer function-pair  $f_x(y) = \bar{g}_x(y)/c$  and  $f_y(x) = \bar{g}_y(x)/c$  being the projections of a (0,1)-value function  $f(x, y)$  according to Theorem 1.

*Step 5.* Reconstruct a (0,1)-value function  $f$  from the projections  $f_x$  and  $f_y$ .

*Step 6.* Construct  $g(x, y) = c \cdot f(x, y) + d$ .

## 2 Results

Absolute volume data were derived by multiplying the voxel volume of the reconstructed ventricle with the third power of the isocentre-related voxel size (0.71 mm for LV, 0.82 mm for RV). In Table 1, the LV and RV volume data determined with the binary reconstruction approach (BR) are compared with the results of the multiple-slices (MS) and area length method (AL). The listed values are: end-systolic volume ( $ESV$ ), end-diastolic volume ( $EDV$ ), stroke volume ( $SV = EDV - ESV$ ) and ejection fraction ( $EF = SV/EDV$ ). Whereas no further scaling was used for BR, phase dependent correction factors  $< 1$  were applied to the volumes MS and AL determined from the size of the ventricular silhouette alone.

**Table 1.** Left (LV) and right ventricular (RV) volume data derived with the binary reconstruction approach (BR), the multiple-slices (MS), and the area length method (AL). The correction factors used for MS and AL are based on the cast studies of [2] and listed in parentheses

Volume Data	LV					RV				
	BR	MS	AL	BR	MS	AL	BR	MS	AL	
$ESV$ [ml]	7.6	(.55) 5.9	(.60) 5.5	13.7	(.50) 9.3	(.54) 9.8	13.7	(.50) 9.3	(.54) 9.8	
$EDV$ [ml]	21.3	(.72) 17.4	(.80) 16.9	34.0	(.58) 23.1	(.62) 24.7	34.0	(.58) 23.1	(.62) 24.7	
$SV$ [ml]	13.7	11.5	11.4	20.3	13.8	14.9	20.3	13.8	14.9	
$EF$	0.64	0.66	0.67	0.60	0.60	0.60	0.60	0.60	0.60	

## Acknowledgements

The authors thank Leslie Lamport for writing the document preparation system  $\text{\LaTeX}$ .

## References

1. Kuba, A., Volcic, A.: Characterisation of measurable plane sets which are reconstructable from their two projections. *Inverse Problems* **4** (1988) 513–527

2. Lange, P.E., Onnasch, D.G.W., Farr, F.,L., Malerczyk, V., Heintzen, P.H.: Analysis of left and right ventricular size and shape, as determined from human casts. Description of the method and its validation. *Europ. J. Card.* **8** (1978) 431-448
3. Prause, G.P.M., Onnasch, D.G.W.: Binary reconstruction of the heart chambers from biplane angiographic image sequence. *IEEE Trans. Medical Imaging* **15** (1996) 532-559
4. Wang, Y.R.: Characterization of binary patterns and their projections. *IEEE Trans. Comput.* **C-24** (1995) 1032-1035

# Title of Your Paper

First Author<sup>1</sup>, Second Author<sup>2</sup>, and Third Author<sup>3</sup>

<sup>1</sup> Institute of First Author  
`first@author`

<sup>2</sup> Institute of Second Author  
`second@author`

<sup>3</sup> Institute of Third Author  
`third@author`

**Abstract.** The text of the Abstract.

## 1 Section One

Here is the First Section [1].

## 2 Section Two

The text of Section Section Two [1, 2].

## 3 Section Three

The text of Section Three [1–3]

## Acknowledgements

Here are the Acknowledgements.

## References

1. Reference 1
2. Reference 2
3. Reference 3

# How to Insert Figures/Graphics into L<sup>A</sup>T<sub>E</sub>X Documents

Kálmán Palágyi<sup>1</sup>

Department of Applied Informatics, University of Szeged, Hungary  
palagyi@inf.u-szeged.hu

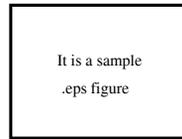
**Abstract.** This paper is to present some examples of inserting figures/graphics into L<sup>A</sup>T<sub>E</sub>X documents by the help of the style `epsfig`.

## 1 Introduction

T<sub>E</sub>X designed by Donald Knuth [2] is widely used in scientific writing. Several macro packages have been proposed for extending T<sub>E</sub>X. Leslie Lamport's L<sup>A</sup>T<sub>E</sub>X format [3] is probably the most commonly used T<sub>E</sub>X format written on top of Plain T<sub>E</sub>X. L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> is the new standard L<sup>A</sup>T<sub>E</sub>X [1]. Figures/graphics can be inserted into L<sup>A</sup>T<sub>E</sub>X documents with the help of the style `epsfig`.

## 2 Inserting a Figure Containing a Single Picture

Figure 1 presents an example of a figure containing a single picture.



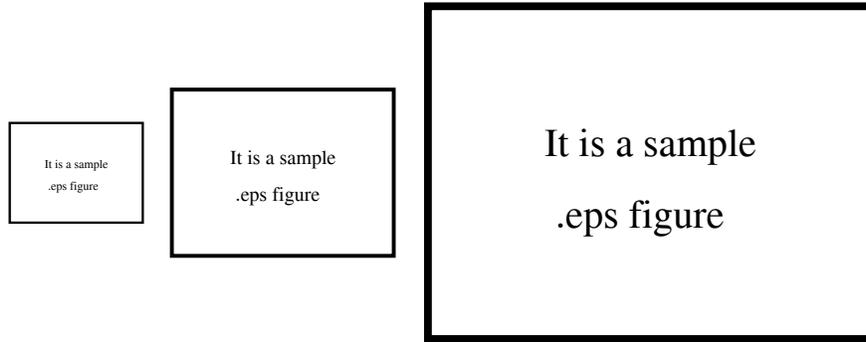
**Fig. 1.** A single picture

## 3 Placement of Pictures in a Row

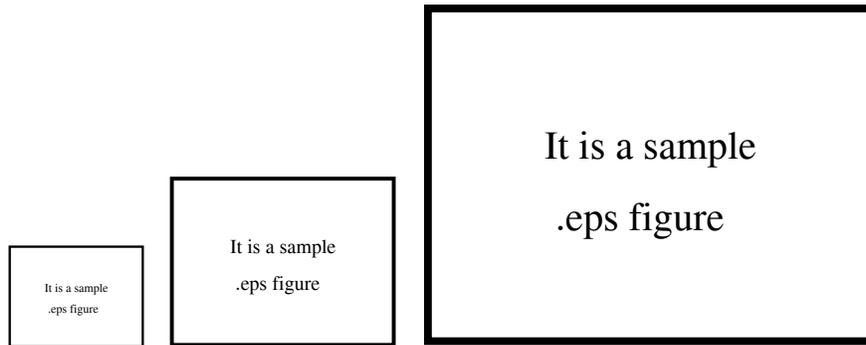
Two examples of multicolumn figure are given by Figs. 2 and 3.

## 4 Placement of Pictures in Several Rows

A general example can be seen in Fig. 4.



**Fig. 2.** Three pictures in a row placed by the help of the `minipage` environment



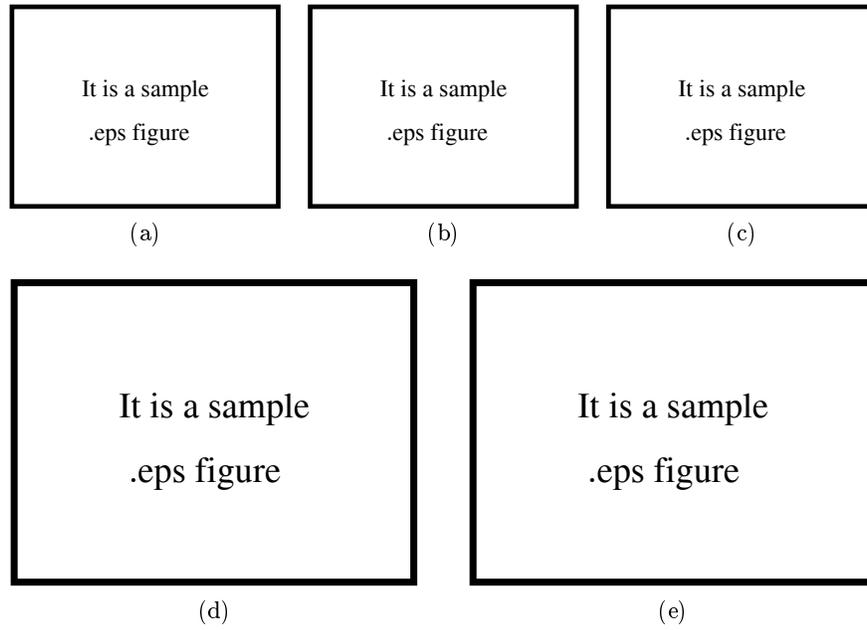
**Fig. 3.** Three pictures in a row

## Acknowledgements

The author is grateful to Sebastian Rahtz for writing the convenient style `epsfig`.

## References

1. Goossens, M., Mittelbach, F., Samarin, A.: *The L<sup>A</sup>T<sub>E</sub>X Companion*. Addison–Wesley (1994)
2. Knuth, D.E.: *The T<sub>E</sub>Xbook*. Addison–Wesley (1986)
3. Lamport, L.: *L<sup>A</sup>T<sub>E</sub>X: A Document Preparation System*. Addison–Wesley (1986)



**Fig. 4.** A figure containing five pictures