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A Meaningless Paper Containing Something

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Abstract. This paper is to present some elements of L^AT_EX 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

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

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		
ESV [ml]	7.6	(.55)	5.9	(.60)	5.5		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	
SV [ml]	13.7		11.5		11.4		20.3		13.8		14.9	
EF	0.64		0.66		0.67		0.60		0.60		0.60	

Acknowledgements

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Title of Your Paper

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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^AT_EX Documents

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Abstract. This paper is to present some examples of inserting figures/graphics into L^AT_EX documents by the help of the style `epsfig`.

1 Introduction

T_EX designed by Donald Knuth [2] is widely used in scientific writing. Several macro packages have been proposed for extending T_EX. Leslie Lamport's L^AT_EX format [3] is probably the most commonly used T_EX format written on top of Plain T_EX. L^AT_EX 2_ε is the new standard L^AT_EX [1]. Figures/graphics can be inserted into L^AT_EX 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.

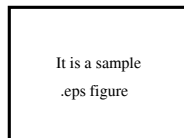


Fig. 1. A single picture

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.

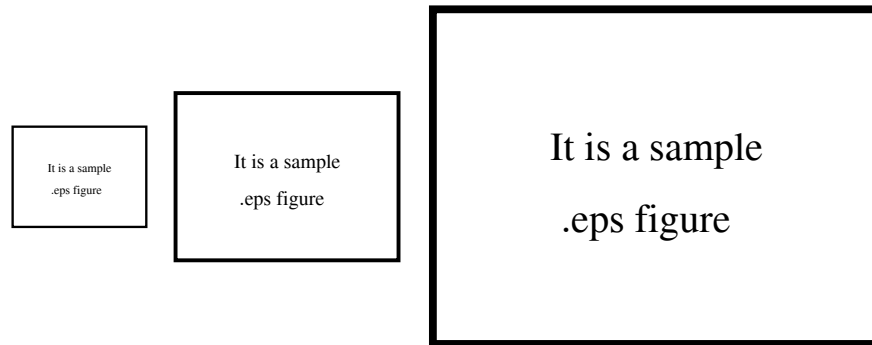


Fig. 2. Three pictures in a row placed by the help of the `minipage` environment

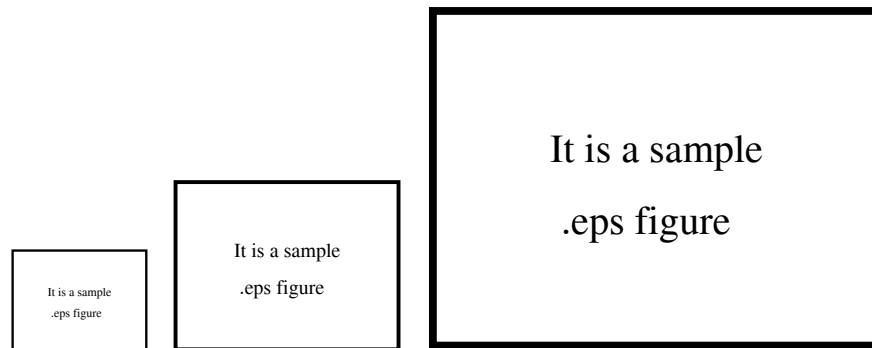


Fig. 3. Three pictures in a row

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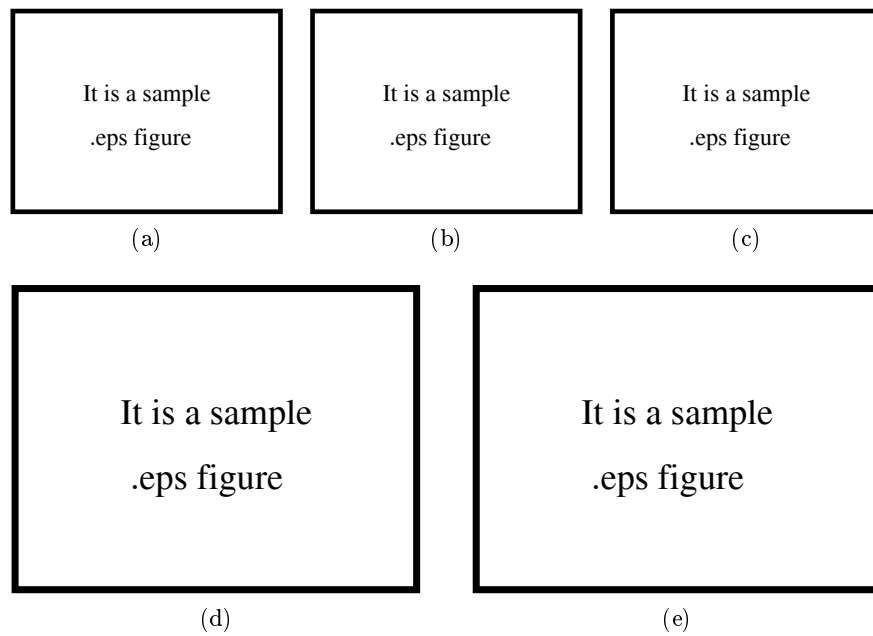


Fig. 4. A figure containing five pictures