The Art of working efficiently with Scientific Work Place

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Abstract

Basic hints for working without the mouse in SWP, and not only. The present notes are preliminary and not in final form!!! Please send me your comments if you find other interesting features of the program.

1 How to stop worrying about that rubish called TEX – use SWP

You need first some investment.

The main idea of the present writing is to help mainly mathematicians, physicists, engineers, and other scientists who have to write a lot of documents with **Latex2e** fast. It is extremely useful for writing big as well as smaller documents. The main idea below is how to avoid using the MOUSE (ironically, one of the biggest discoveries). Avoiding the mouse is the main story below – many people dislike SWP since they have to use the mouse very often. On the other hand they do not understand also the navigation features of the program which is indispensible tool for writing bigger documents.

Almost all nice features are in the version SWP 3.0 and there is no bigger change in SWP 4.0 in the present features.

1.1 First to do – the User Setup

Now we assume that you open the present document with SWP.

Go to the top menu bar *Tools* $\longrightarrow$ *User Setup.*

- A basic thing is at the bottom: Make "Save as"= Portable Latex. Thus you will obtain a file which is written in the usual Latex2e, and your paper is ready to be sent to everywhere or to be edited further with other editors if you like.
- The first thing to do is to make the MathStyle in the top menu *Tools->UserSetup.* Then take Math. Make Spacebar^2 = Math Mode, and in **Spacebar** click "After space switches to Math", and in the topic "At the

end of math" click "Enters space and switches to Text". These seem to be the best ways to switch Math and Text, otherwise you have to use the mouse and to go to the top bar, or to use *Ctrl-M* and *Ctrl-T*. You have to use also these options which are a bit more inconvenient but sometimes it is necessary.

- Then you have to decide which are the Toolbars which you need. Some are useless as you will see. The "*Standard*" toolbar is good with the "save", "open new document", print, toolbar, etc. Useful is also the "Lense" – if you place it to the right of an object (or inside the object) then you will be able to change its options, say if you have brackets (), then it will help you to use the window with all brackets. In *View->toolbars* you use "Stop" only if youwork with Maple. If you typeset very often then add the "*Typeset*" toolbar. "*Math1*" is useless since you may encode it as *Fragments* or *Automatic Substitution*, see below. "Math2" toolbar is very rich and you may use it from time to time, I have put it on. "*Symbol*" toolbar has a lot of stuff and I have it on. "*Compute*" toolbar is good if you use Maple. "*Navigate*" toolbar is good if you write a bigger document since then you may look at the sections, subsections, etc. and at the "names of all formulas, markers, etc. – on the very right side". "*History*" toolbar is very useful – e.g. if you go to a formula (by clicking on a citation of the formula somewhere in the text) and then you want to come back to that place, this is the only way. "*Common symbols*" toolbar is useless since you may make them as Automatic Substitution. "*Tag*" toolbar is very useful – you enter Theorems, Lemmas, Remarks, Definition, etc., and the second tag is for Sections, subsections, Centered text, quotation, etc., and also changing the fonts (in the third tag) is useful. Although for the main fonts we may have functions keys, the typical definition is F4 =normal text, F5= boldface, F6= emphasize. "*Fragments*" toolbar is useful if you forget you definitions of fragments which does not happen often, so it is prettily useless.

But the basic instruments for saving a lot of time and to almost completely avoid the usage of the mouse is to apply wherever possible the **Automatic Substitution** and the **Fragments**.

2 A basic tool is *Tools ->Automatic Substitution* which is used in the MathMode only

1em =
2em =
3pt = $\cdots$ (dots)
pt = $\cdot$
aa = α
bb = β

abs = $||$
apr = $\approx$
bar =
bb = β
bsk = $[]$
case = $\{$
Matrices are modified from the Edit->Insert (rows/columns)
con = $\subset$
dd = δ
dl = Δ
ee = ε
ell = ℓ
emty = $\varnothing$
ffi = ϕ
fi = φ
Fi = Φ
fnto = $\mapsto$
folows = $\Longrightarrow$
ge = $\geq$
gg = γ
grt = $>$
hata = $\widehat{\ }$
hh = η
ident = $\equiv$
iff = $\Longleftrightarrow$
iinf = ∞
iint = $\int$
inn = $\in$
kk = κ
l2m = $L_2\,(\mu)$
le = $\leq$
ll = λ
lss = $<$
m1 = $^{-1}$
mm = μ
nabla = ∇
neq = $\neq$
nin = $\notin$
nnn = ν
normm = $\|\|$
ortho = $\perp$
part = ∂
pm = $\pm$
pp = π
psi = ψ
Psi = Ψ

pt = $\cdot$
rr = ρ
rsp =
scalar = $\langle\rangle$
setmin = $\setminus$
sk = ()
sqrt = $\sqrt{}$
ssk = {}
sss = σ
sum = $\sum$
tilde = $\widetilde{}$
times = $\times$
tmin = $\ominus$
to = $\rightarrow$
tplus = $\oplus$
tsk = (t)
tto = $\longrightarrow$
ttt = τ
Union = $\bigcup$
union = $\cup$
ww = ω
xkv = $|x|^2$
xsk = (x)
xx = ξ
yy = θ
YY = Θ
zsk = (z)
zz = ζ
tsk = (t)

3 Fragments

The second main feature for avoiding the Mouse is using the Fragments.

One usually defines the fragments for standard phrases. For example,

"we consider the integral $\int_{\mathbb{R}^n} f(x)\,dx$ which is equal to the sum $\sum_{j=0}^{\infty} c_j^2$ "

or the following more complicated

"we consider the integral $\int_{\mathbb{R}^n} f(x)\,dx$ which is equal to the sum $\sum_{j=0}^{\infty} c_j^2$ and the

$$\int + \sum$$

where we have the same amount".

You have to **mark** the text and then use the top menu *File->SaveFragment* where you write the name of the fragment. It may contain say 2 or 3 letters but even more. Note that there is also a small diskette appearing on the bottom bar which after clicking on it gives the saving window.

The easiest way to **recover a fragment** is to keep *Ctrl* pressed and then to write the name of the fragment.

4 How to eliminate *Insert* from the top bar

So far the main thing is that you may save a lot of time instead of using the standard insertion way: from the **top menu,** *Insert->Field* takes a lot of time to click with the mouse for getting the window. The trick is that in the fragments saved below we have a dot which is absolutely necessary for saving it (otherwise the fragment is unsavable)

mar = ,
re = 4,
ci [**?**],
tex = TEX,
comment = ,
foot = [1]
ind =

Thus the above means that after pressing the Ctrl (and keep pressing it) the letters "r" and then "e" you will get 4, etc.

Thus the *Insert* is prettily useless, one may put in *fragments* or *Automatic substitution* all there.

In a similar way we may shortcut for *Insert–>Table*

5 Another great thing - *navigation*

If you are reading the tex file with the SWP you will be able to **navigate** following all chapters, sections, etc. But also you will be able to go from the citation point (where you cite some formula) to the formula which has been cited!!! and then come back to the same place. If you have the reference (**??**): then pressing **Ctrl+click** on **??** and you will go to the place in the text where it is!!! then there is a navigation arrow (you have to find it in the **Navigator tool-bar**) which will bring you back, etc.

Also you have to find the **navigation tool-bar** (you may add it by going to the top menu bar *View–>Toolbars* and then check the Navigator) with a falling menu where you see all chapters, sections, etc. in the text.

On the right of that **navigation bar** is another small button - if you press it you will see all **names of fomulas, etc. (also the citations)** which you have defined in the text, and you may use it to find a formula as well!

So if you are reading a big book then there will be no problem to find a place, and to navigate throughout the whole text. You may go to the cited theorem, to any object which has been cited, and then you come back to the place where the citation has been made.

[1].

6 Notes on *table* and *matrix* editing

1. One has to note that the editing of the *table* or *matrix* is from *Edit–>Insert Row/Insert Column* and not from Insert!!!!!!!!

$$\bigoplus \bigotimes \sum \bigwedge \biguplus \iint \int \cdots \int \bigcup$$

7 Maple

You may use the Maple machine for computations with formulas and for drawing graphs. Maple is on the top menu bar. If you write some integral you may go to *Maple –>Evaluate*, or if you write a system of equations then you may go to *Maple–>Solve*, etc. Or if you write some formula then you may go to *Maple–>Plot2D* or 3D, etc. , and see its plot.

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