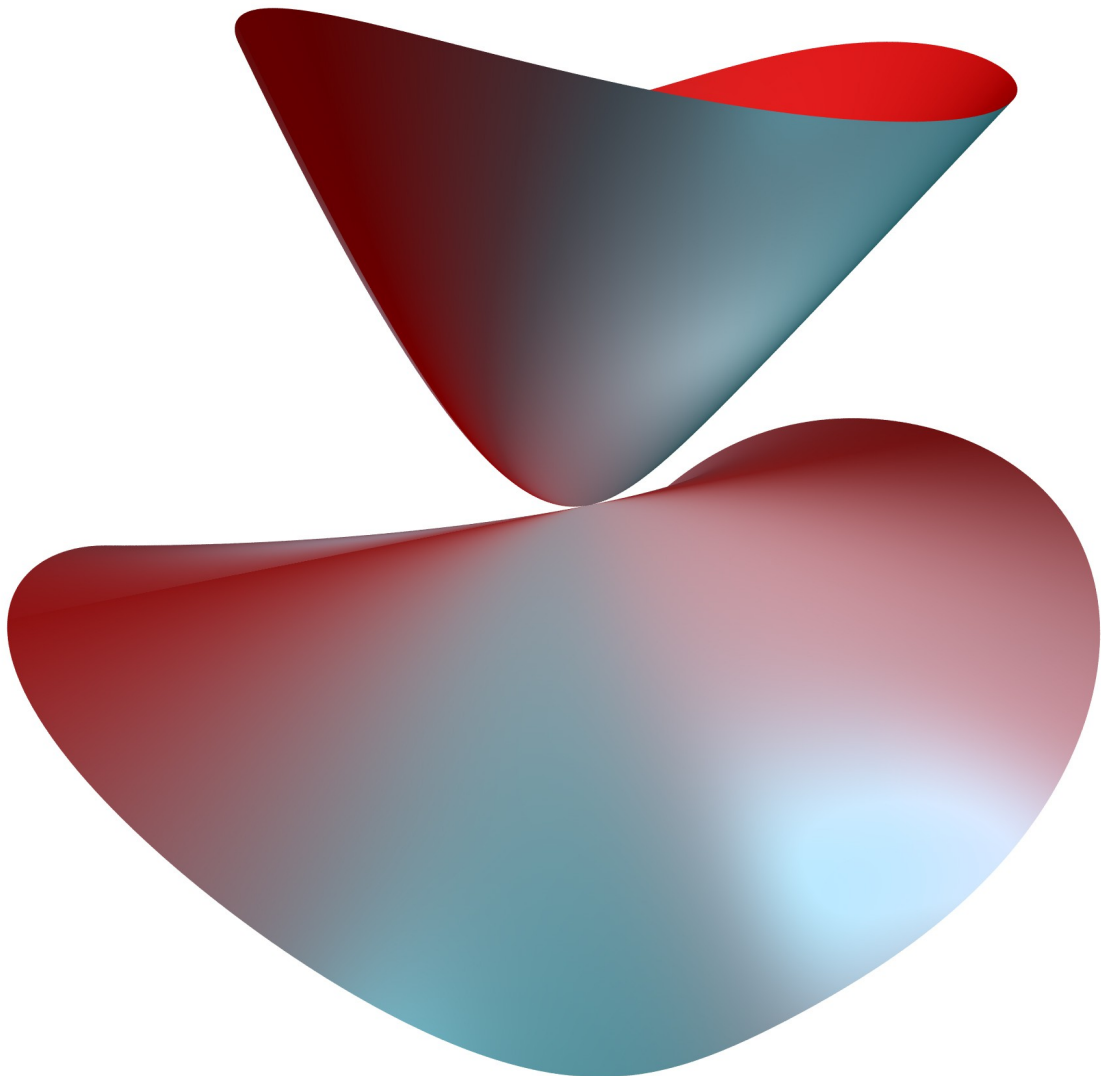


# IMAGINARY

open mathematics

**SURFER 2008 - TECHNICAL MANUAL FOR INSTALLATIONS**

**AT EXHIBITIONS AND IN MUSEUMS**



**Version 1.0 (26.07.2012)**

## **OPERATING SYSTEM AND HARDWARE REQUIREMENTS**

We generally use the UBUNTU operating system and recommend it for fixed installations at exhibitions and in museums. General hardware recommendations for the computer:

- Processor family: Intel Core i5 or higher
- Processor model: 660
- Speed: 3,33 GHz
- Memory: 4 GB DDR3
- CD-Rom
- Graphic Card: a standard graphic card (no special graphic card is needed for SURFER 2008)
- Mouse
- Keyboard

### **Special hardware requirements:**

- Touch screen (for all programmes) or other big screen/monitor/TV / projector.

Note: that SURFER 2008 will also run on systems with normal graphic cards and slower computers. Surfer will probably be slower in raytracing the picture, but it will still run.

## **UBUNTU**

For installations in exhibitions and museums we use Ubuntu 10.04 (LTS, Desktop Edition, 32 Bit). Info: We are also just working on our own UBUNTU version called IMAGIBUNTU which offers a small system specialized for museums and exhibitions. We will add information here once the system is ready. It will also be available on the IMAGINARY website.

Please install this version, to be downloaded here:

<http://releases.ubuntu.com/lucid/>

While installing use the following setup:

Language: English

Keyboard: your local keyboard

Name/Password: can be chosen by you (please remember it, since you will need it during installation several times!) Login Mode: always (without password)

After the installation, some settings have to be changed:

- 1) Turn off Visual Effects (System --> Preferences --> Appearance)
- 2) Turn off Screen Saver (System --> Preferences --> Screen Saver)
- 3) Adjust Power Management (System --> Preferences --> Power Management) - no black screen, no turning off (put all on "never").

## **JAVA**

For this you need an internet connection for the computer.

To install Java open a terminal (Application --> Accessories --> Terminal). Then execute the following commandos (one after the other, pressing "ENTER" after each line). Then the package will be installed automatically. (Note: you will maybe have to enter the password you set in the installation process to confirm adding new software)

```
sudo add-apt-repository "deb http://archive.canonical.com/ lucid
partner"
sudo apt-get update
sudo apt-get install sun-java6-jre sun-java6-plugin sun-java6-fonts
```

You can test the installation with this commando

```
java -version
```

(you should get the version number of the installed Java)

## **SURFER**

If you have an internet connection you can download the program directly from the web-download-link. We recommend having an Internet connection while installing. Download the latest UBUNTU package from the SURFER 2008 website and double click (execute) it. Surfer will then be automatically installed:

Note that before installing a new version, please always completely remove the previous version with System ---> Administration --> Synaptic Package Manager (look for SURFER, choose SURFER, right click it and choose "mark for complete removal", then click "apply").

SURFER is best to be used in 1024 x 768 (for video projectors) but also runs in higher resolution (it does not run properly on smaller screen resolutions). It was made for screen ratio 4:3, but also adapts to 16:9 or other ratios.

You find the Surfer programme in your Ubuntu software menu under Applications --> Other.

There are two links, one for the full screen version (exhibition mode, exit with ALT+F4) and the standard window version.

## **Change Icon Configuration and Start Language**

To adapt the icons appearing in the User Interface of Surfer, for example takig out the "PRINT" Icon or language icons, you have to edit the file surfer\_ui.exhibition.xml in the folder /usr/local/share/surfer.

You can for example take out the line (using text editing programmes like gedit):

```
<toolitem action='Print' />
```

if you put it in comments (it is done with other items too) by writing:

```
<!-- <toolitem action='Print' /> -->
```

The same you can do with the language symbols, taking out one or more of the following lines:

```
<toolitem action='LangES' />
<toolitem action='LangDE' />
<toolitem action='LangEN' />
etc.
```

4) To start Surfer directly in a specific language you can use one of the following commandos for German/English/Spanish:

```
surfer -l de_DE.utf8
surfer -l en_GB.utf8
surfer -l es_ES.utf8
```

### Install Print Option

For exhibitions and museums we recommend an additional printer (laser colour printer, A5 format). This way users/visitors can print their own creations, take them home or leave them at a user display. It adds an important participatory component to the exhibit. At the print-out we display the equation in LaTeX format.

To install the print option:

a) Install Latex

Open a terminal (Applications --> Accessories --> Terminal) and then type:

```
sudo apt-get install texlive-latex-base texlive-math-extra texlive-latex3
```

Enter your password.

b) Prepare the directory “surfer-printing” on the Desktop

Type in a terminal (if necessary open a new terminal (Applications --> Accessories --> Terminal)):

```
mkdir ~/Desktop/surfer-printing
cd ~/Desktop/surfer-printing
```

Then put the contents of printing package that you find on the SURFER download page into the surfer-printing directory (copy them there after unzipping).

c) Set the path image resolution in the Surfer configuration. Open the file `~/surfer`. For that you can go to “Places”, go to “home” and then choose “Show hidden files” in the “View”-Menu. Then all hidden files are shown, go to `.surfer` and right-click it and choose “edit with gedit”.

In the file please add the following lines (maybe the print resolution line is already there, then you do not have to add it, add the other line just above the `print_resolution` line):

```
print=/home/imaginary/Desktop/surfer-printing/print.sh
print_resolution=1740
```

Note: “imaginary” has to be the username of the PC – you can see it if you go to (Places) and then see the directory details of the surfer-printing directory.

d) You can now attach a printer and set it on default mode in the Ubuntu printer settings. In Surfer there is a small “print” button on the lower right side, that then sends the picture to the printer. The printer has to be set on A5-size mode. A5 paper can just be made by yourself if you cut A4 paper in half (on the longer side).

e) What is very nice, if you print sample images (see file attached Surfer-print-

images-selection.zip), that were all created by visitors of other exhibitions to pin them to a user display board. This way, visitors can take them or replace them with images that they print themselves.

## **TOUCHSCREEN DRIVER**

Please ensure that the touch screen you use offers Linux/Ubuntu support. Unfortunately many companies do not or only offer outdated drivers.

After installing the driver calibration is a main issue. Sometimes, calibration only worked in Windows (while once it was calibrated it then also applied to Ubuntu on the same system). Some drivers enable property bars that have to be hidden or turned off.

## **Contact**

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