

# KNOPPIX/Math ICMS2010

Tatsuyoshi Hamada\* and KNOPPIX/Math committers

\* Fukuoka University/JST CREST  
email: hamada@holst.sm.fukuoka-u.ac.jp

## Introduction

KNOPPIX/Math is a project to archive free mathematical software and free mathematical documents and offer them on KNOPPIX. It provides a desktop for mathematicians that can be set up easily and quickly.

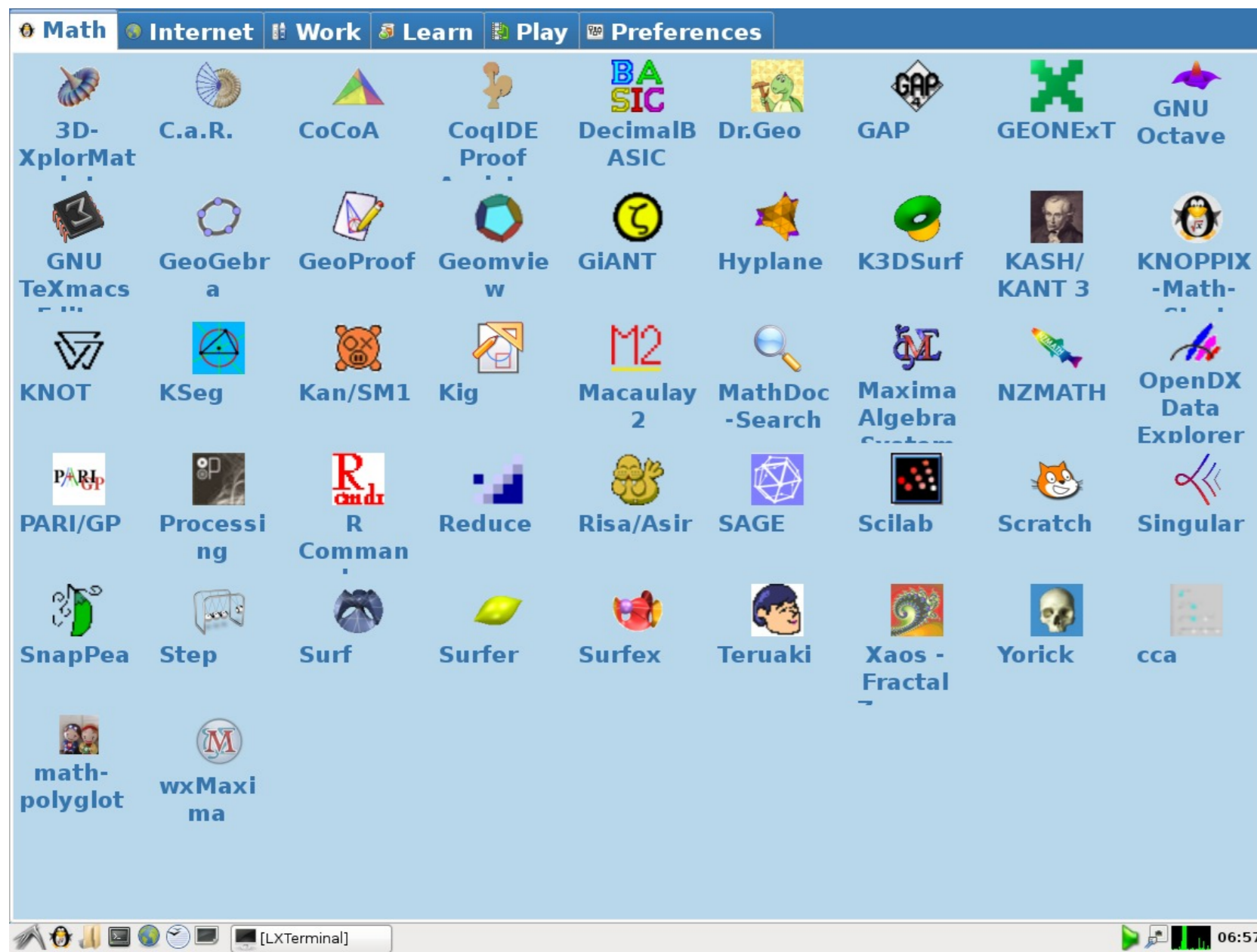


Figure 1: KNOPPIX/Math desktop.

Our system includes  $\TeX$ , OpenOffice.org, Mozilla Firefox, GNU Emacs, Kile, a KDE based GUI  $\TeX$  editor, and GNU  $\TeX$ macs, an office suite for  $\TeX$  writing. The DVD includes many mathematical software systems or libraries with documents, such as 3D-XplorMath-J, 4ti2, BLAS, C.a.R., cca, cddlib, CoCoA, Coq, DecimalBasic, Dr. Geo, Eukleides, GAP, GeoGebra, Geomview, GEONExT, gfan, GeoProof, GiANT, GNU R, Gnuplot, Hyplane, K3DSurf, Kali, Kan/sm1, KASH/KANT, Kig, KNOT, KSEG, LAPACK, LiE, Macaulay2, math-polyglot, Maxima, Mjdeep, Normaliz, NZMATH, Octave, OpenXM, PARI/GP, PyGeo, Qhull, Reduce, Risa/Asir, SAGE, Scilab, Singular, skeleton, Sollya, SnapPea, surf, surfer, surfex, Surface Evolver, Teruaki, XaoS, and Yorick, ...

## How to run the live system (Windows machine or PC/AT compatibles)

This DVD contains a lot of documents and packages of mathematical software systems. Once you run the live system, you can experience a wonderful world of mathematical software systems without needing to make any installations yourself. This is a bootable DVD. If you can boot from the DVD, then please reboot. The live system will be ready.

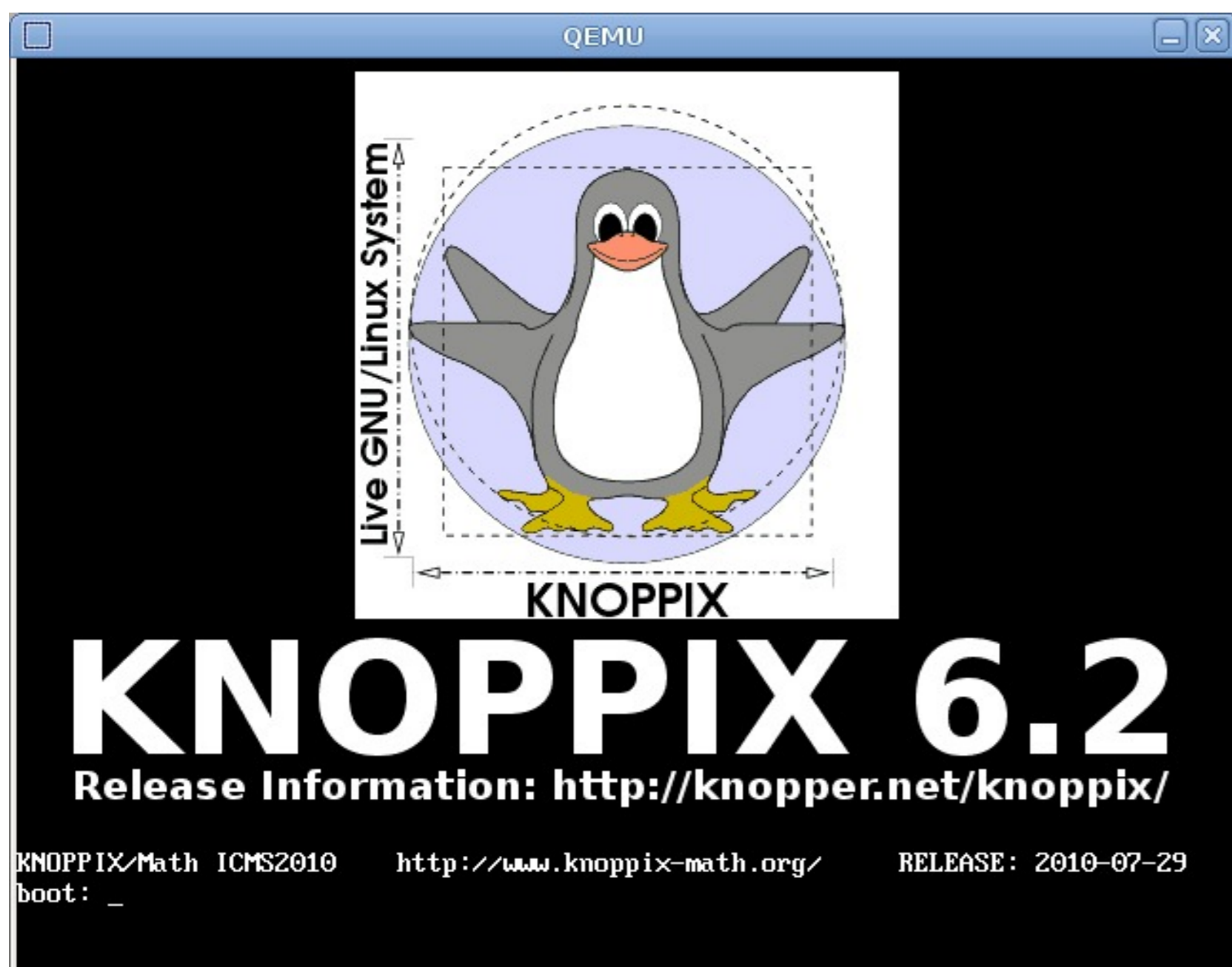


Figure 2: KNOPPIX/Math is booting.

If your machine is not bootable, or has very special hardware devices which KNOPPIX cannot drive, we recommend you download the "VMware Player". Once you have installed the VMware Player, you can start our live system from this DVD or from our preinstalled virtual machine (faster) for VMware Player. The instructions for installing and using the virtual machine can be found in <http://www.math.kobe-u.ac.jp/vmkm/> Note that when you install the VMware Player, the Norton internet security or equivalent software systems should be turned off.

## Mathematical software systems

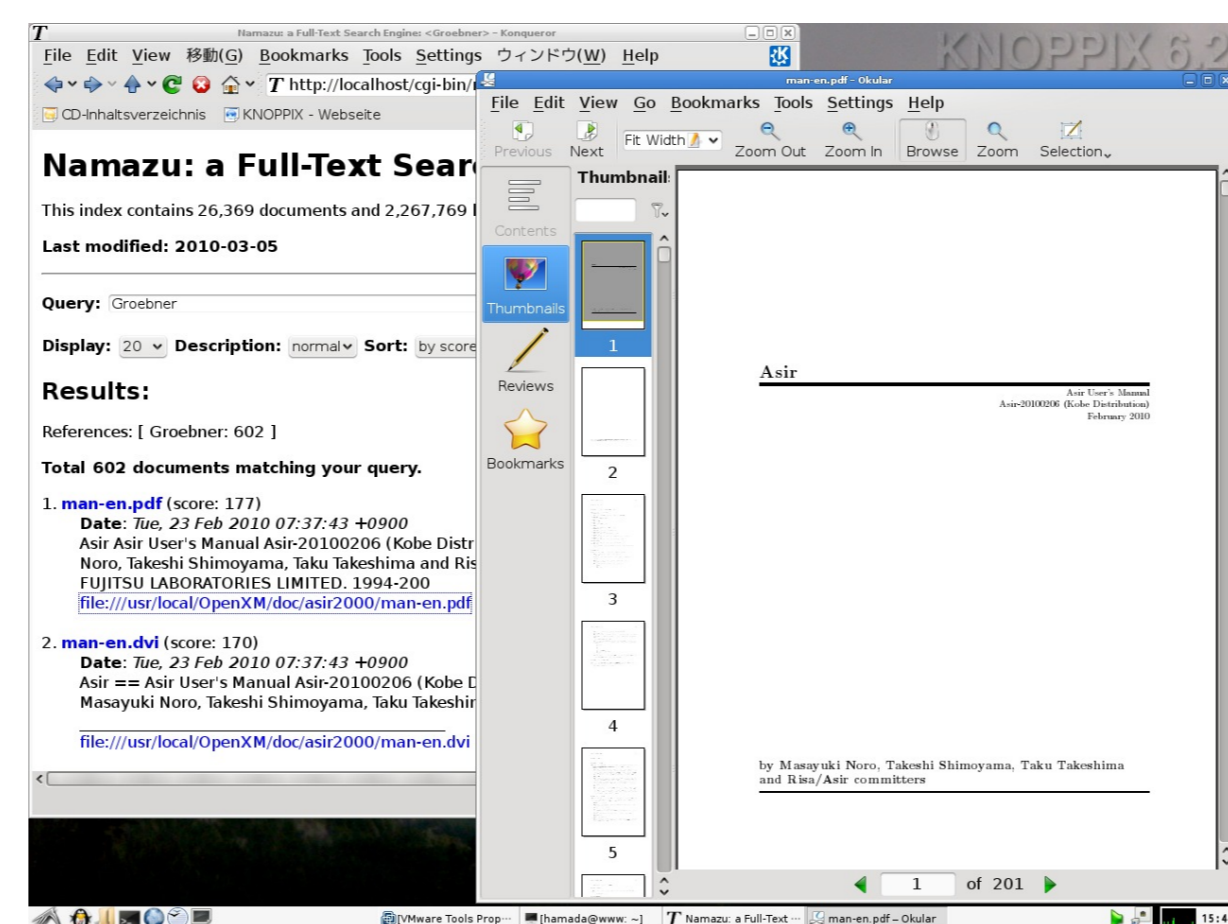


Figure 3: MathSocSearch

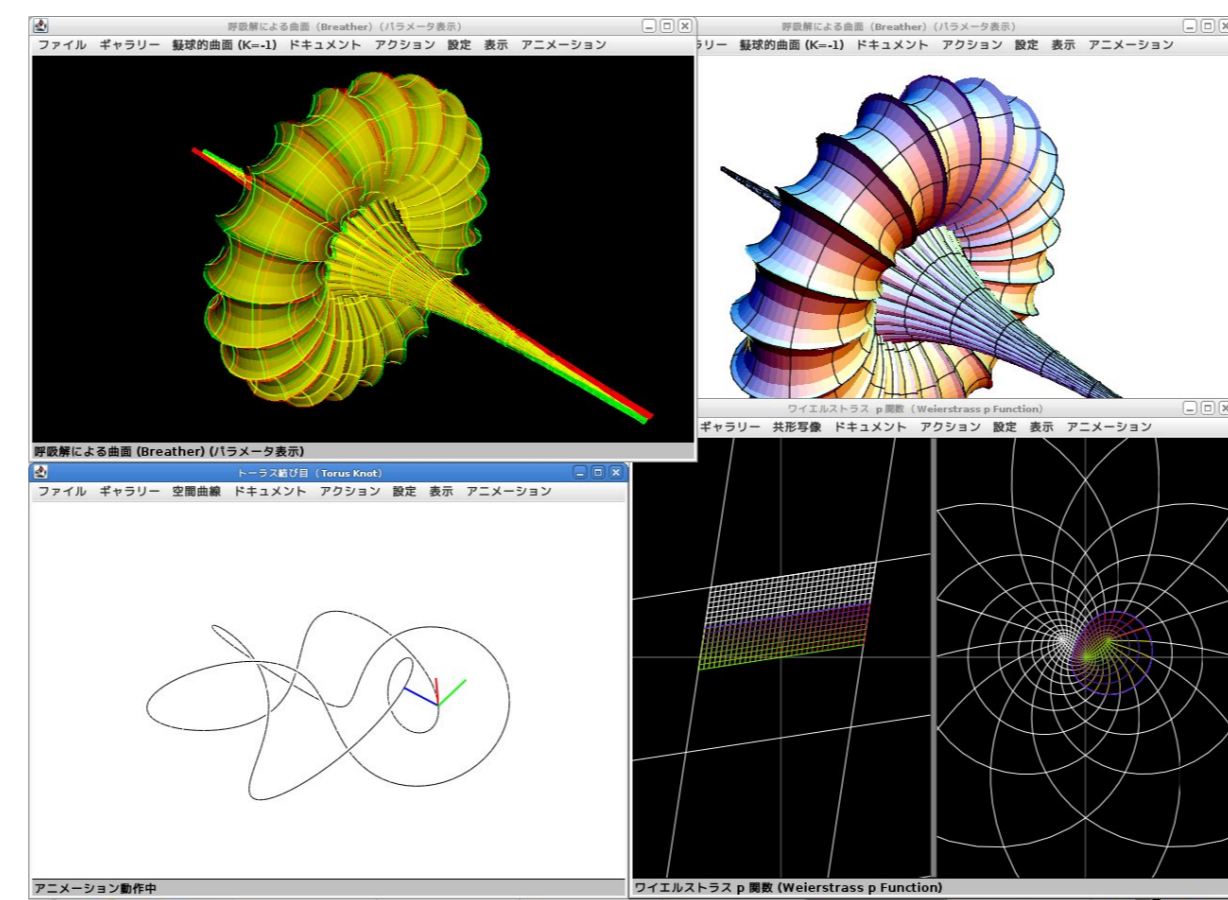


Figure 4: 3D-XplorMath-J

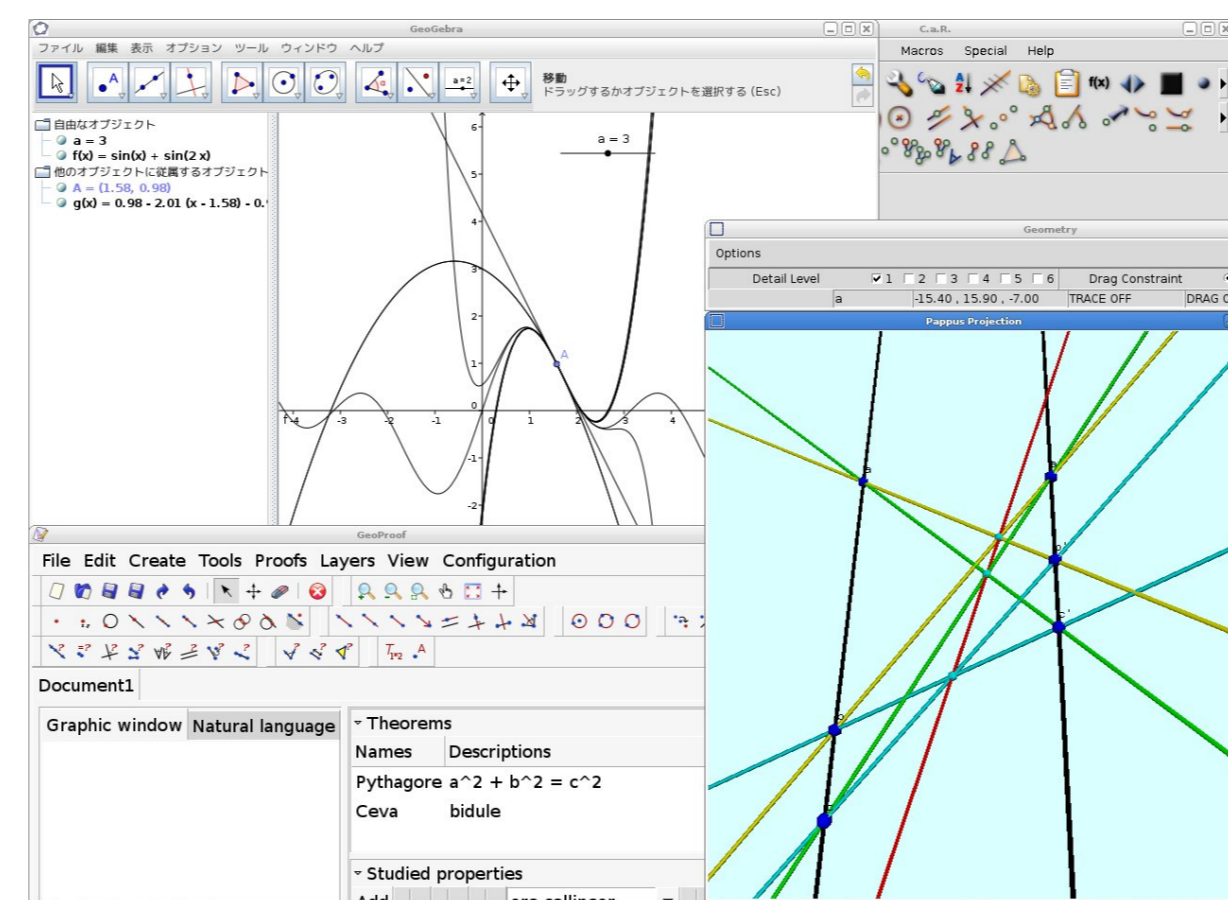


Figure 5: DynamicGeometry

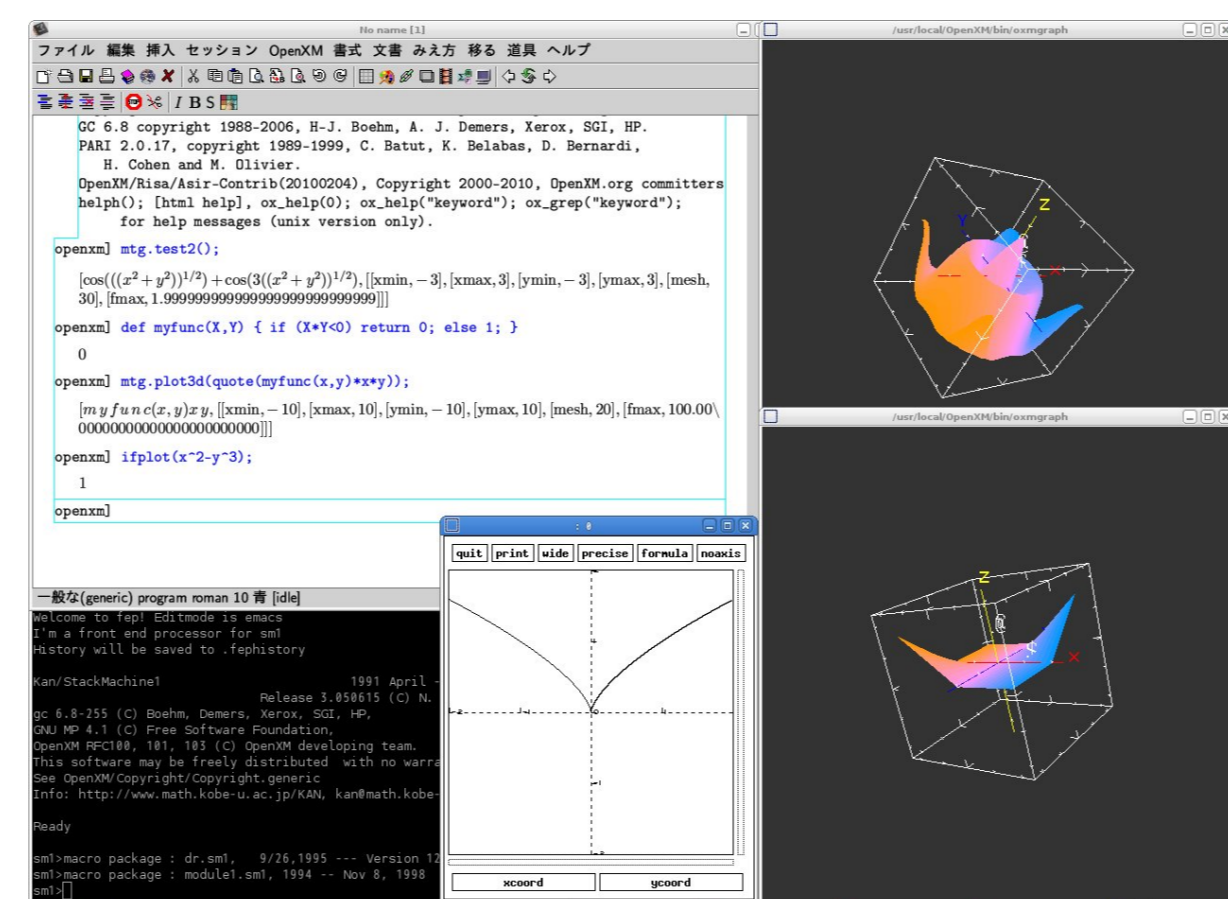


Figure 6: Risa/Asir(OpenXM)

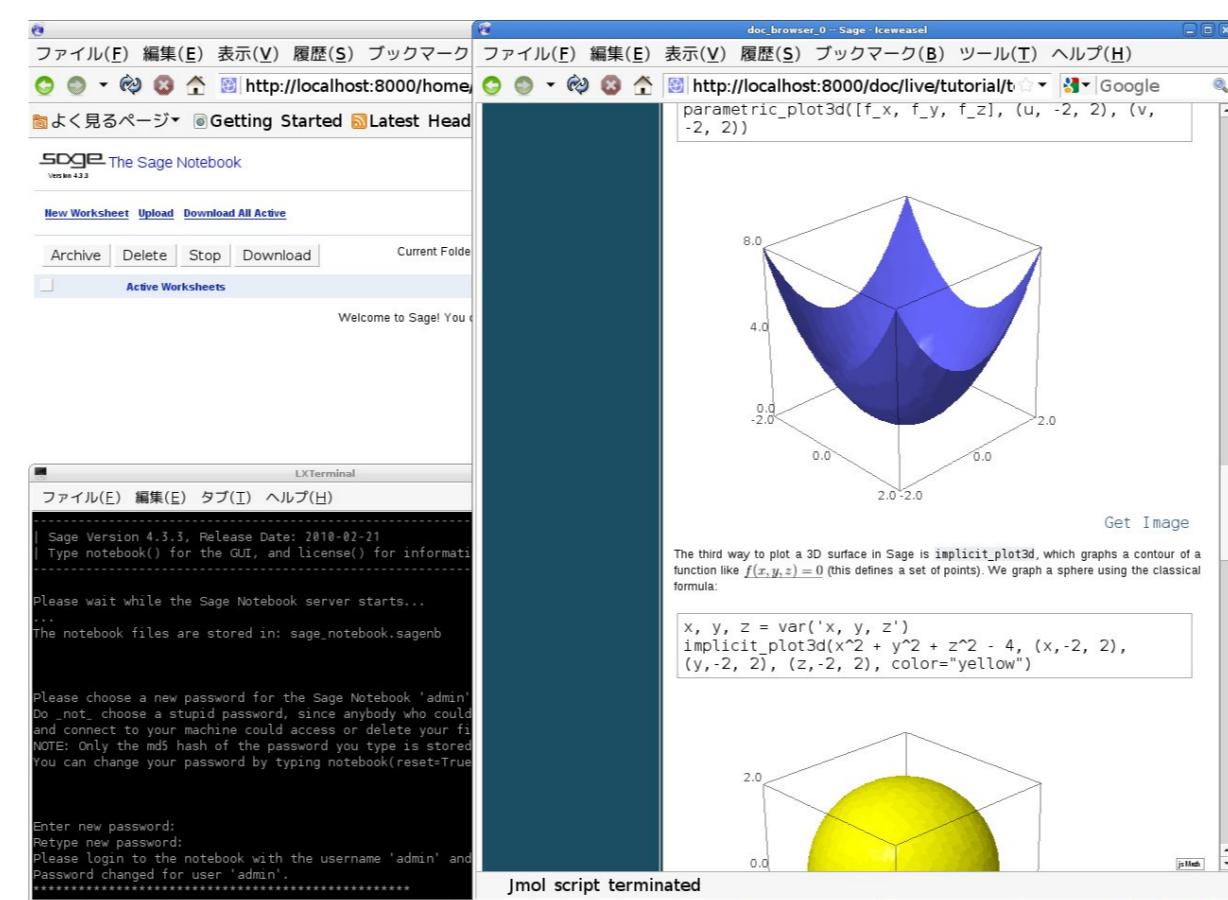


Figure 7: SAGE

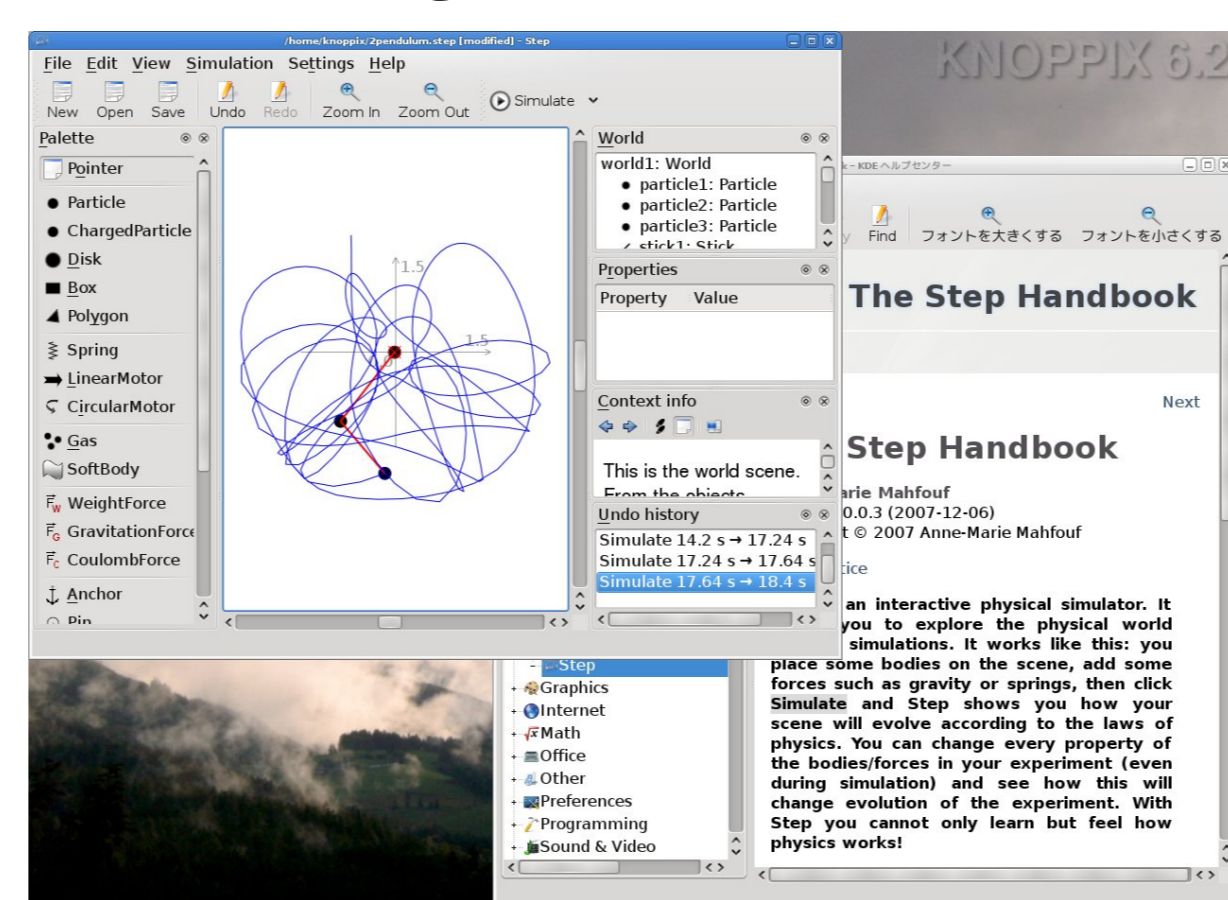


Figure 8: Step

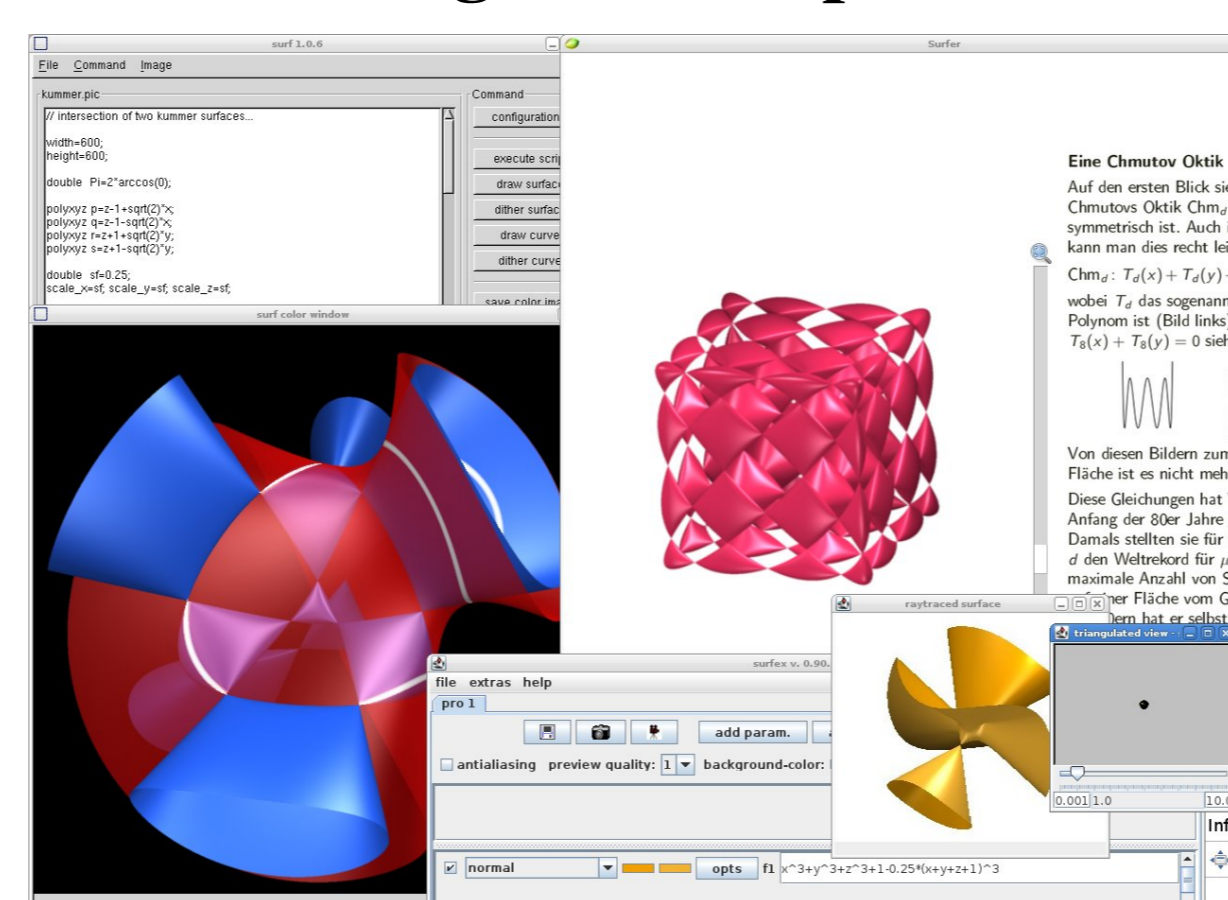


Figure 9: surf family

## How to run the live system (IntelMac)

This DVD contains a lot of documents and packages of mathematical software systems. Once you run the live system, you can experience a wonderful world of mathematical software systems without needing to make any installations yourself. In order to run the live system, we recommend to use the PC emulator "VMware Fusion" or "Sun Virtual-Box". Note that you need to set the "energy save" to "better performance" in the "system preferences". Otherwise, the parallel virtual machine will not return after being in sleep mode.

## FAQ (frequently asked questions)

Q. Where can I find documents of mathematical software systems.

A. Click "KNOPPIX-Math-Start" on the desktop of the live system. It will show you a list of software systems and documents.

Q. After the power is turned off, I lose all documents which I wrote.

A. If you boot from the DVD, all documents are stored in the RAM. Then, you will lose all your data after the power is turned off. In order to save data permanently, you need to copy them to a USB memory or to the hard disk. Please visit the KNOPPIX site for more details. If you boot from the VMware image in the VMware Player, all documents which you wrote will be stored permanently in your harddisk.

Q. How do I copy documents to other machines?

A. There are numerous ways (1) sending documents as an attachment of a web mail (2) using the "scp" command (3) using samba or ssh with "konqueror"

Q. Can I boot this DVD on my Mac?

A. If the CPU is Intel, we can boot DVD with "C" key. But if the CPU is the PowerPC, unfortunately, we cannot.

Q. How do I install the KNOPPIX/Math to my hard disk like other linux systems?

A. If you are an expert, please use the command "Own" or "LC ALL=C Own". This is an experimental command. (If you fail to initialize the hard disk, please use other linux distributions to initialize the hard disk or use the commands "cfdisk" and "mkfs".) If you are not expert, we recommend you do not try this and instead use the preinstalled image file for the VMware Player. It is very easy and comfortable.

Q. The computer starts from the DVD, but the screen becomes black and the system hangs. What should I do?

A. Our system does not use your hard disk unless you mount it. Therefore, you may turn off your power switch and it will cause no damage to your computer. There are several boot options (cheatcodes). You can see them by pressing F2 or F3. A typical boot option which will lead you to a successful booting is "knoppix screen=1024x768" or "knoppix xmodule=fbdev"

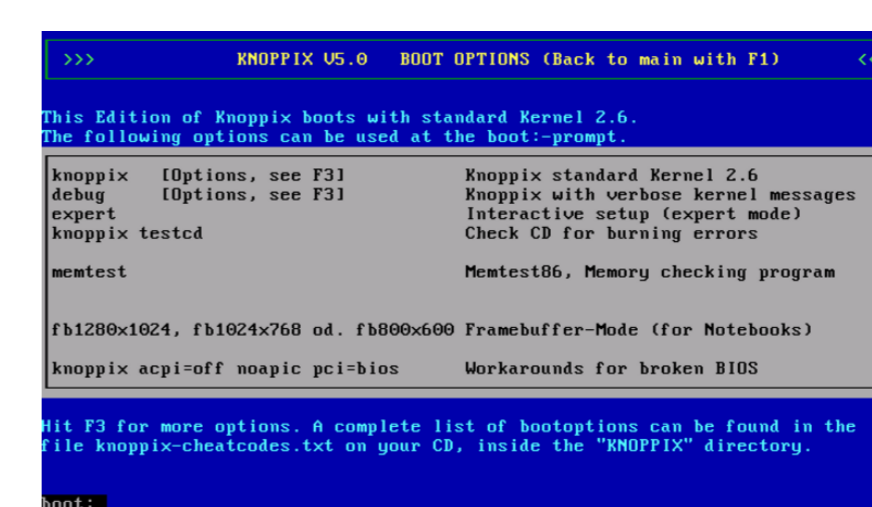


Figure 10: F2

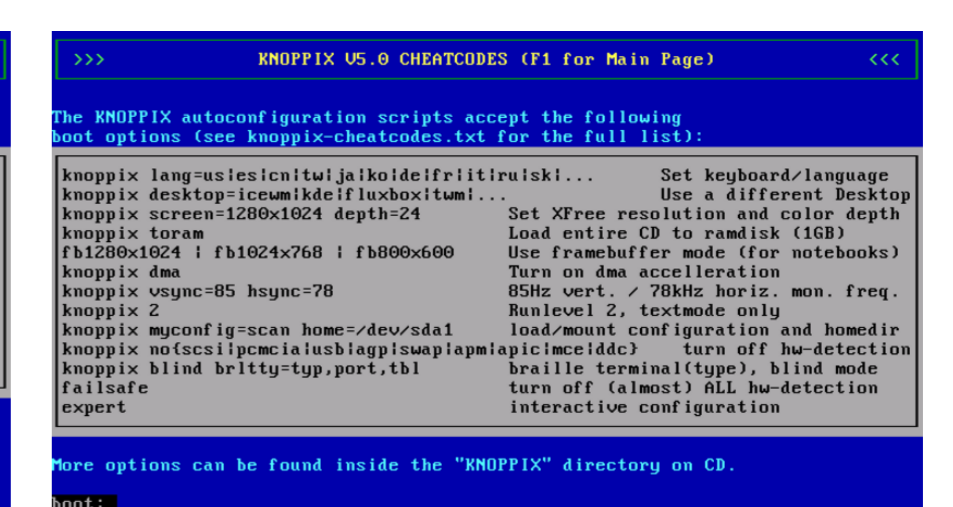


Figure 10: F3

Q. Can I use other language?

A. Boot with "knoppix lang=fr". You can see other language options in F3. For example, Spanish, French, German, Italian menus are supported.

Q. Can I use old computer?

A. Yes, KNOPPIX/Math is using LXDE:Lightweight X11 Desktop environment. It is an extremely fast-performing desktop environment.