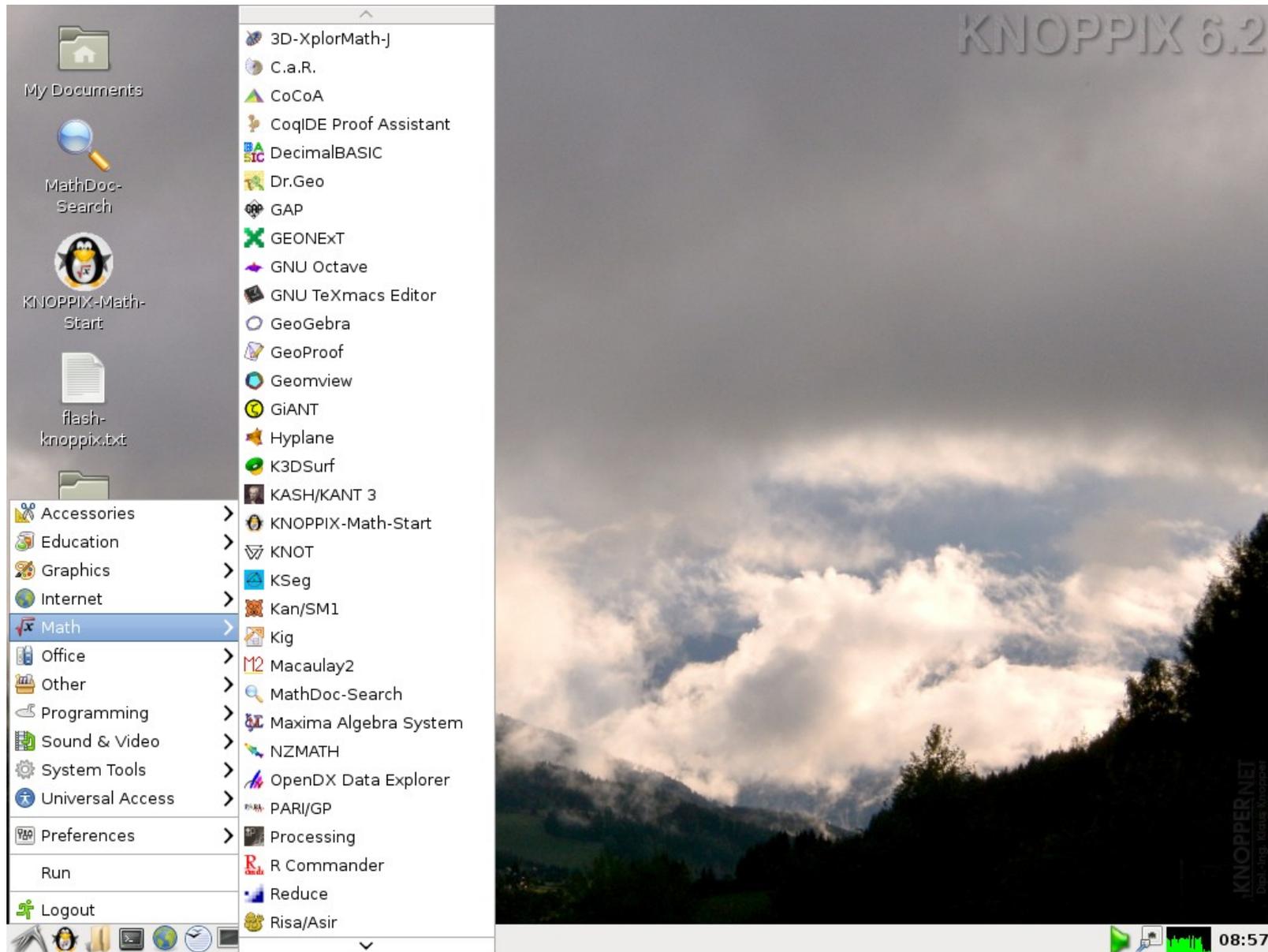


# KNOPPIX/Math



# KnxmLauncher



# KNOPPIX-Math-Start

KNOPPIX/Math - Iceweasel

File Edit View History Bookmarks Tools Help

file:///UNIONFS/usr/share/knoppix-math-start/km-s-en.html Google

Meistbesuchte Seit... KNOPPIX

[Japanese]

## KNOPPIX/Math



- [KNOPPIX/Math](http://www.knoppix-math.org/) ( <http://www.knoppix-math.org/> )
- [KNOPPIX/Math Documents](#)

### Mathematical software projects

1. [3D-XplorMath-J](http://3d-xplormath.org/j/) ( <http://3d-xplormath.org/j/> )
  - Visualization and experimental tool for mathematics
  - 3D-XplorMath-J is a program for visualizing and experimenting with a variety of mathematical objects or "exhibits."
  - Commands

```
3D-xplorMath-J
```


2. [4ti2](http://www.4ti2.de/) ( <http://www.4ti2.de/> )
  - Software package for algebraic, geometric and combinatorial problems on linear spaces.
  - Computation of Hilbert bases, Grover bases, toric Groebner bases

Done

[knxm-icm2010....] [LXTerminal] KNOPPIX/Math - ... 09:14

# MathDocSearch

**Namazu: a Full-Text Search Engine**

This index contains 26,369 documents and 2,267,769 keywords.

Last modified: 2010-03-05

Query:   [\[How to search\]](#)

Display:  Description:  Sort:

Target:

- doc
- man
- jdml
- texlive

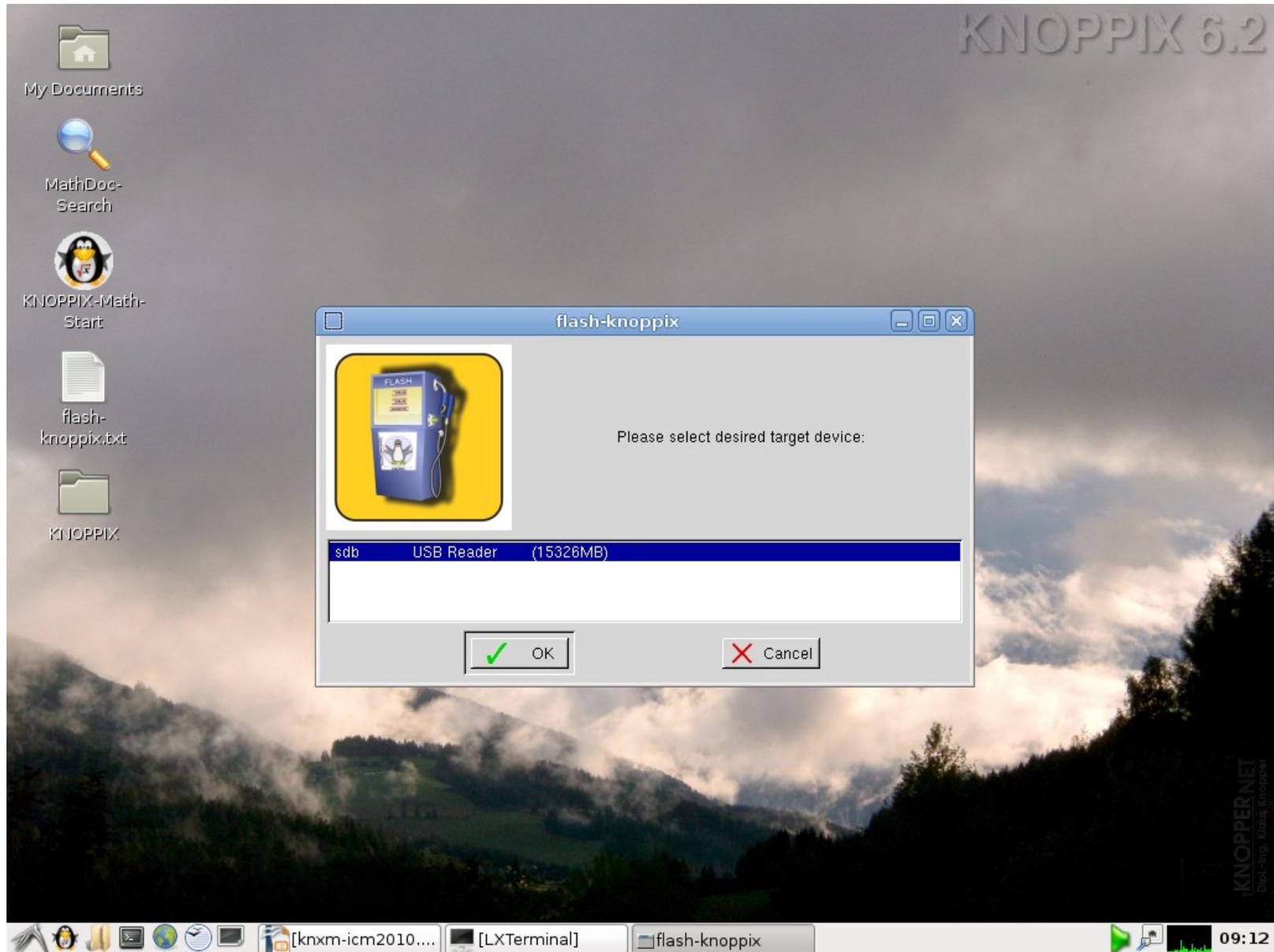
**Results:**

References: [ Groebner: 581 ]

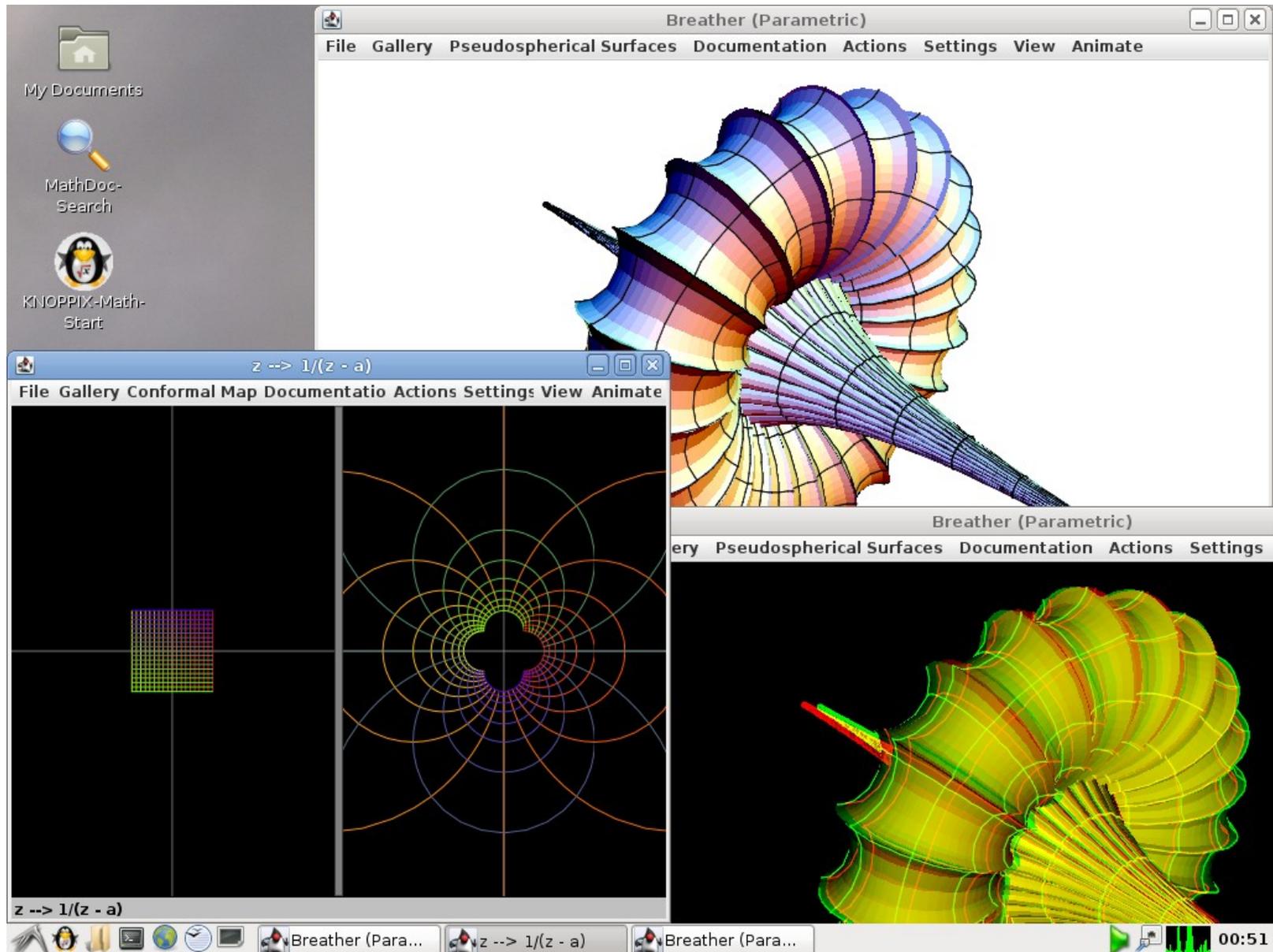
Total 581 documents matching your query.

- [man-en.pdf](#) (score: 177)  
Date: Tue, 20 Jul 2010 08:18:18 +0000  
Asir Asir User's Manual Asir-20100206 (Kobe Distribution) February 2010 by Masayuki Noro, Takeshi Shimoyama, Taku Takeshima and Risa/Asir committers Copyright c FUJITSU LABORATORIES LIMITED. 1994-200  
<file:///usr/local/OpenXM/doc/asir2000/man-en.pdf> (484,282 bytes)

# flash-knoppix



# 3D-XplorMath-J



# 4ti2

The image shows a Linux desktop environment with two windows. The background is a dark, abstract image. The top window is an LXTerminal window titled "LXTerminal" with a menu bar "File Edit Tabs Help". It displays the following text:

```
-----  
4ti2 version 1.3.2, Copyright (C) 2006 4ti2 team.  
4ti2 comes with ABSOLUTELY NO WARRANTY.  
This is free software, and you are welcome to redistribute it under certain conditions.  
For details, see the file COPYING.  
-----  
  
Usage: graver [options] PROJECT  
  
[Basic options]  
-i, --ignore          system is linear  
-m, --maxnorm         write vectors  
  
[Logging options]  
-n, --logging=0      no logging  
-l, --logging[=1]   simple logging  
-ll, --logging=2    verbose logging  
-lll, --logging=3   very verbose logging  
  
[Output options]  
-q, --quiet, --verbose=0  quiet mode  
-v, --verbose[=1]        simple output  
-vv, --verbose=2         verbose output
```

The bottom window is a PDF viewer titled "4ti2\_manual.pdf" with a menu bar "File Edit View Go Help". It shows the first page of the manual, which is titled "User's Guide for 4ti2 version 1.3.1". The page content includes:

User's Guide for 4ti2 version 1.3.1

A software package  
for algebraic, geometric and combinatorial problems on linear spaces

January 5, 2007

The PDF viewer has a sidebar with a "Thumbnails" view showing three thumbnails labeled 1, 2, and 3. The first thumbnail is selected. The viewer also has navigation buttons for "Previous" and "Next", and a page indicator showing "1 of 25" and "Best Fit" zoom level.

The desktop taskbar at the bottom shows several icons: a penguin, a folder, a terminal, a globe, a mail icon, a printer, and a network icon. The system tray on the right shows the time "09:16".

# C.a.R.

C.a.R. : ... /usr/share/car/doc\_en/Data/Autodemos/Ellipse1.zir

File Edit Options Settings Macros Special Help

```
> M : (-0.35, 0.09)
> k1 : 5.18
> P2 : (-3.16, 2.09)
S1 : (-1.33501, 3.04882)
k2 : 2.06153
```

Autotrack: Click to stop (shift left/right for speed)

C.a.R. : ... /usr/share/car/doc\_en/Data/Autodemos/Cindarella-Maschine.zir

File Edit Options Settings Macros Special Help

```
> DP2 : (-3.46861, 1.96)
> P3 : 1.14873
> DP5 : (-3.46861, -0.05)
> DP6 : (-4.43637, 1.34111)
S1 : (-3.46861, -1.66572)
S3 : 3.15873
S4 : 2.59521
S5 : 2.59521
S9 : (1.71821, -0.05)
S10 : (1.71821, -1.66572)
S6 : 2.59521
S7 : 2.59521
P15 : (3.28484, 2.03675)
S8 : 0.87303
S8 : 2.4585
S15 : (4.15787, -1.34813)
S16 : (4.15787, -7.93212)
S9 : 4.21838
> sB* : 1.14873
k12 : 0.87303
> r1 : 1.38963
S31 : (0.412225, -0.85786)
S32 : (-2.15316, -0.85786)
r2 : 2.03675
```

Animation: Running (click to stop)!

C.a.R. : ... /usr/share/car/doc\_en/Data/Autodemos/Ellipse2.zir

File Edit Options Settings Macros Special Help

```
> k1 : 6.04
S1 : (4.1, -0.3)
S4 : (-4.5, -0.3)
S2 : 6.18799
S3 : 6.18799
S4 : 10.3188
```

Autotrack: Click to stop (shift left/right for speed)!

C.a.R. : ... /usr/share/car/doc\_en/Data/Poincaré Geometry.zir

File Edit Options Settings Macros Special Help

```
> k : 6
> P2 : (-2.28711, -2.50198)
> P3 : (2.67331, -2.64371)
C2 : 7.34815
> P4 : (-1.64934, -4.79322)
C3 : 3.18261
> P5 : (-0.68088, 3.545)
C4 : 21.92061
```

Move: Select a point (shift: more points, ctrl: show old state)!

# cddlib

The image shows a Linux desktop environment with two windows open. The top window is an LXTerminal window titled "LXTerminal" with a menu bar "File Edit Tabs Help". The terminal output shows the command `fourier` being executed, resulting in the following text:

```
knoppix@Microknoppix:~$ fourier
* cddlib: a double description library:Version 0.94f (February 7, 2008)
* compiled for C double arithmetic.
* Copyright (C) 1996, Komei Fukuda, fukuda@ifor.math.ethz.ch

cddlib test program to apply Fourier's Elimination to an H-polyhedron.
>> Input file: [ ]
```

The bottom window is a PDF viewer titled "cddlibman.dvi (cddlibman.pdf)" with a menu bar "File Edit View Go Help". The viewer shows page 1 of 19, with "Fit Page Width" selected. The PDF content is the "cddlib Reference Manual" by Komei Fukuda, published by the Institute for Operations Research and Institute of Theoretical Computer Science at ETH Zurich. The manual version is February 7, 2008, and the cddlib version is 0.94. The table of contents is as follows:

Contents	
1 Introduction	2
2 Polyhedra H- and V-Formats (Version 1999)	3
3 Basic Object Types (Structures) in cddlib	5
4 Library Functions	7
4.1 Library Initialization	7
4.2 Core Functions	7
4.3 Data Manipulations	11
4.3.1 Number Assignments	11
4.3.2 Arithmetic Operations for <code>mytype</code> Numbers	11
4.3.3 Predefined Constants	12
4.3.4 Sign Evaluation and Comparison for <code>mytype</code> Numbers	12
4.3.5 Polyhedra Data Manipulation	13
4.3.6 LP Data Manipulation	13
4.3.7 Matrix Manipulation	14
4.4 Input/Output Functions	14

The desktop taskbar at the bottom shows several icons, including a terminal window titled "[knxm-icm2010....", a file manager window titled "[Index of file:///u...", and the LXTerminal window. The system clock in the bottom right corner shows "09:18".

# CoCoA

The image shows a Linux desktop environment with two windows open. The window on the left is titled "LXTerminal" and shows a terminal session with the command `cocoa` executed. The window on the right is titled "XCoCoA 4.7: Interactive Document" and shows the graphical user interface of the CoCoA system. Both windows display the same content: a logo consisting of three stylized shapes, version information (4.7.5), online help instructions, and a web site URL (<http://cocoa.dima.unig>). The terminal window also shows the current ring  $R := \mathbb{Q}[x, y, z]$  and the results of several commands: `Use S ::= Q[x, y, z, w];`, `I := Ideal(xy - z^2);`, `J := Ideal(xy - zw);`, `xy IsIn I;` (False), `x^2y - xz^2 IsIn I;` (True), and `I + J;` resulting in `Ideal(xy - z^2, xy - zw)`. The XCoCoA window has a menu bar with "File", "Edit", "CoCoA", "Settings", and "Help", and a toolbar with various icons. The status bar at the bottom of the XCoCoA window shows "Ready [9ms]", "Line: 1 Col: 18", and "HI: 5". The system tray at the bottom of the desktop shows the time as 01:25 and several application icons.

```
knoppix@Microknoppix:~$ cocoa
-----
--
--
--
--
-- Version      : 4.7.5
-- Online Help  : type ? or ?keyw
-- Web site    : http://cocoa.dima.
-----
-----
-- The current ring is R ::= QQ[x,y,z];
-----
Use S ::= Q[x,y,z,w];
I := Ideal(xy - z^2);
J := Ideal(xy - zw);
xy IsIn I;
False
-----
x^2y - xz^2 IsIn I;
True
-----
I + J;
Ideal(xy - z^2, xy - zw)
-----

```

XCoCoA 4.7: Interactive Document

```
-----
--
--
--
--
-- Version      : 4.7.5
-- Online Help  : type ? or ?keywor
-- Web site    : http://cocoa.dima.unig
-----
-----
-- The current ring is R ::= QQ[x,y,z];
-----
Use S ::= Q[x,y,z,w];
I := Ideal(xy - z^2);
J := Ideal(xy - zw);
xy IsIn I;

```

Interactive (Q)

```
x^2y - xz^2 IsIn I;
```

Ready [9ms] Line: 1 Col: 18 HI: 5

# Coq

The image shows a Linux desktop environment with a terminal window and the CoqIDE application. The terminal window, titled 'LXTerminal', shows the following output:

```
knoppix@Microknoppix:~$ coqtop
Welcome to Coq 8.1pl3 (Dec. 2007)

Coq < Definition one := (S 0).
one is defined

Coq < Definition two :
two is defined

Coq < Definition three
three is defined

Coq < Definition double
double is defined

Coq < []
```

The CoqIDE application window, titled 'CoqIde', is open over the terminal. It has a menu bar with 'File', 'Edit', 'Navigation', 'Try Tactics', 'Templates', 'Queries', 'Compile', 'Windows', and 'Help'. Below the menu bar is a toolbar with icons for file operations and a lightbulb icon. The main area is split into two panes. The left pane is titled '\*Unnamed Buffer\*' and is currently empty. The right pane contains the following text:

CoqIDE: an Integrated Development Environment for Coq

Main author : Benjamin Monate  
Contributors : Jean-Christophe Fillâtre  
Pierre Letouzey, Claude Marché

Feature wish or bug report: use

The status bar at the bottom of the CoqIDE window shows 'Ready', 'Line: 1 Char: 1', and 'CoqIde started'. The desktop background is a dark image of a landscape. The system tray at the bottom right shows the time '04:48' and a volume icon.

# DecimalBasic

The image shows a screenshot of a BASIC interpreter environment. The main window, titled "BASIC [ /UNIONFS/usr/lib/BASICEn/FRACTAL/DRAGONC.BAS ]", contains the following code:

```
PICTURE D(n)
  IF n=depth THEN
    PLOT POINTS: 0, 0
  ELSE
    IF n=9 THEN SET COLOR MIX
    DRAW D(n+1) WITH ROTATE(a
    DRAW D(n+1) WITH SHIFT(-1
  END IF
END PICTURE
RANDOMIZE
SET WINDOW -1/2, 3/2, -1, 1
SET POINT STYLE 1
LET alfa=PI/4
LET r=1/SQR(2)
ASK PIXEL SIZE(-1/2, -1; 3/2, 1) p
LET depth=CEIL(-LOG(px)/LOG(r))
DRAW D(1)
END
```

The status bar shows "IN..." and "Ready".

A smaller window, titled "BASIC [ /UNIONFS/usr/lib/BASICEn/FRACTAL/MANDELB2.BAS ]", contains the following code:

```
! Mandelbrot  $\mu$ -map
LET left = -2
LET right = .8
LET h = (right - left)
SET WINDOW left, right, -h/2, h/2
DRAW
ASK P
LET p
LET p
SET P
FOR u
  F O
```

The status bar shows "IN... D".

The main window displays a colorful fractal image, likely a Dragon Curve, with a complex, self-similar structure. The smaller window displays a Mandelbrot set visualization, showing the characteristic fractal boundary of the set.

The system tray at the bottom shows the time as 04:53 and several open windows, including "BASIC [ /UNIO...", "BASIC [ /UNIONFS/usr/...", and "[cweasel]".

# DrGeo

The image displays two overlapping windows of the DrGeo software. The top window, titled "circle-locus.xml", shows a geometric construction with a red circle and several intersecting lines. The bottom window, titled "Sinusoïde", illustrates the relationship between a circle and trigonometric functions. It features a circle with center  $O$  and points  $A, B, A', B', N$  on its circumference. A horizontal line through  $O$  is extended to the right, where a blue sine wave is plotted. A vertical line through  $O$  is extended downwards, where a green cosine wave is plotted. Point  $M$  is on the sine wave, and point  $P$  is on the cosine wave. Dashed lines connect  $N$  to  $M$  and  $P$ . Text labels include "Déplacez N (seul point libre)", "sinus de l'angle (OA, OM)", and "cosinus de l'angle (OA, OP)". The interface includes a menu bar (File, Edit, Animation, Macro-constructions, Windows, Help), a toolbar with various geometric tools, and a status bar at the bottom with the text "Welcome to GNU Dr. Geo - Free Interactive geometry by OFSET". The system tray at the bottom right shows the time "04:57".

# Eukleides

LXTerminal

```
File Edit Tabs Help
knoppix@Microknoppix:~/samples$ more abdul_al_wafa.euk
% This figure is showing Abdul al Wafa's method to draw
% an equilateral triangle inccribed in a square.
% Copyright (c) Christian Obrecht 2001

box(-1,-1,7,7)

A B C D square
O = barycenter(A,B,C,D)
P = rotation(O,C)
c1 = circle(A,C)
c2 = circle(O,P)
I1 I2 intersection(c1,c2)
E = intersection(line(A,I1),line(D,C))
F = intersection(line(A,I2),line(B,C))

draw(A,B,C,D)
color(lightgray)
draw(segment(A,C)) ; draw(segment(B,D))
color(blue)
draw(c1) ; draw(c2)
color(red)
draw(A,E,F)
knoppix@Microknoppix:~/samples$ gv abdul_al
```

PIX 6.2

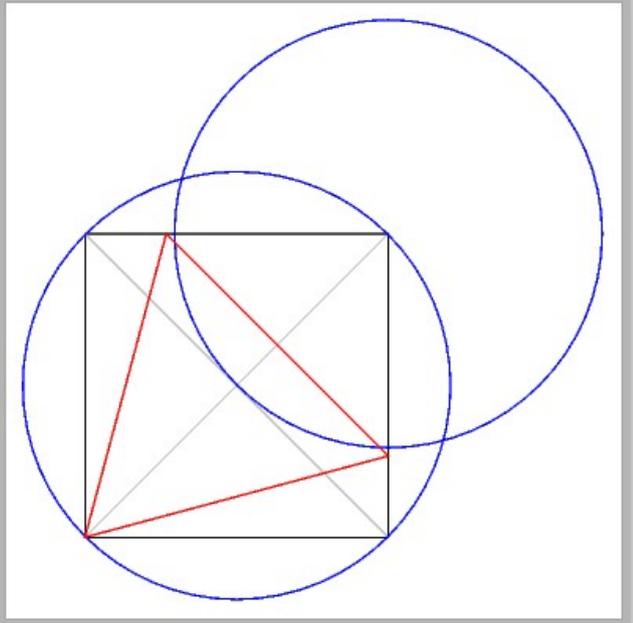
gv: abdul\_al\_wafa.euk.dvi

File State Page Portrait 1.000 BBox abdul\_al\_wa Thu Aug 12 10

Variable Size

Open Print All Print Marked Save All Save Marked

<<>> Reload



LXTerminal [knxm-icm2010... [KNOPPIX/Math ... gv: abdul\_al\_waf... 10:32



# GEONExT

GEONExT Board 3

$\angle ABC = 90.0^\circ$   
 $\frac{BD}{DC} = 0.76$   
 $\frac{AD}{BD} = 0.76$   
 $BD = 3.76$   
 $AD = 2.87$   
 $\angle BDA = 90.0^\circ$   
 $DC = 4.93$

Size 689 x 400 Zoom 100 %

GEONExT Board 1

Tangent to the Radius Theorem

GEONExT Board 1

$\angle CAO = 90.0^\circ$   
 $\angle OBG = 90.0^\circ$   
 $\angle APB = 48.43^\circ$   
 $\angle PDA + \angle APD + \angle DAP = 90.0^\circ + 24.21^\circ + 65.79^\circ = 180.0^\circ$

Highlighted Objects:  $c_a$

$\frac{AB}{CD} = 5.76$   
 $\angle AOB = 122.44^\circ$   
 $\angle COD = 122.44^\circ$

\*Move point R to change the radius of the

Size 689 x 400 Zoom 80 %

# Gnu Octave

LXTerminal

File Edit Tabs Help

GNU Octave, version 3.2.4  
Copyright (C) 2009 John W. Eaton and others.  
This is free software; see the source code for copying conditions.  
There is ABSOLUTELY NO WARRANTY; not even for MERCHANTABILITY or  
FITNESS FOR A PARTICULAR PURPOSE. For details, type `warranty'.

Octave was configured for "i486-pc-linux-gnu".

Additional information about Octave is available at <http://www.octave.org>.

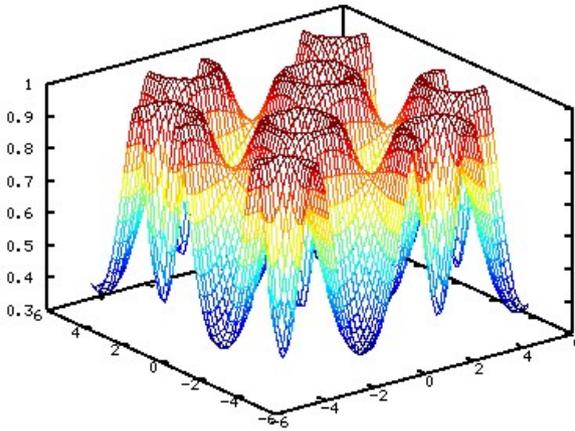
Please contribute if you find this software useful.  
For more information, visit <http://www.octave.org>.

Report bugs to <[bug@octave.org](mailto:bug@octave.org)> (but first visit  
<http://www.octave.org/bugs.html> to learn  
how to report bugs).

For information about changes from previous versions, see  
<http://www.octave.org/changes.html>.

```
octave:1> np=64;a=linspace(-5,5,np);b=a;  
octave:2> for i=1:np;for j=1:np;c(i,j)=sin(a(i)+b(j));endfor  
octave:3> mesh(a,b,c)  
octave:4> 
```

Figure 1



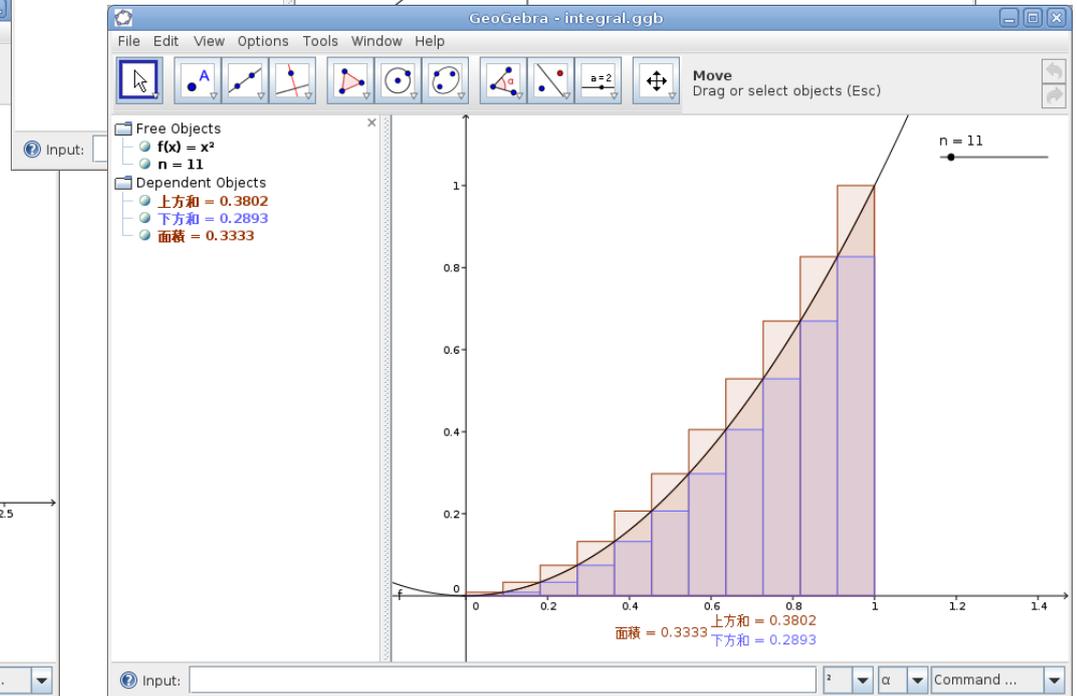
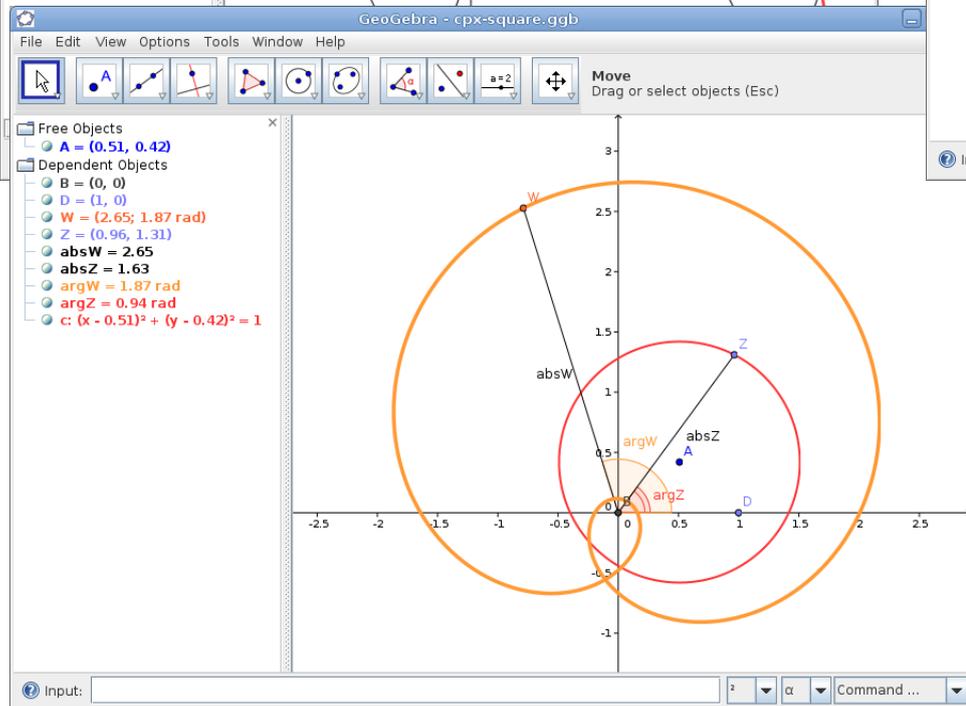
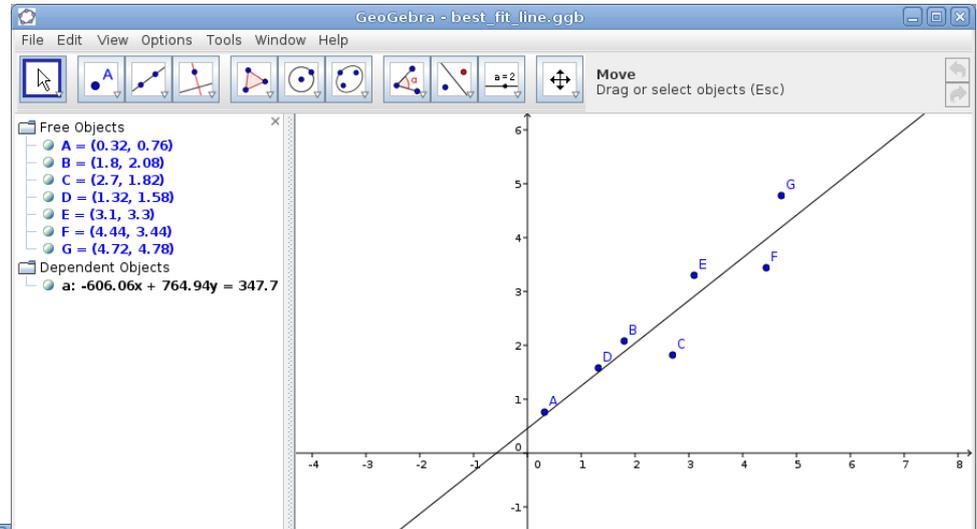
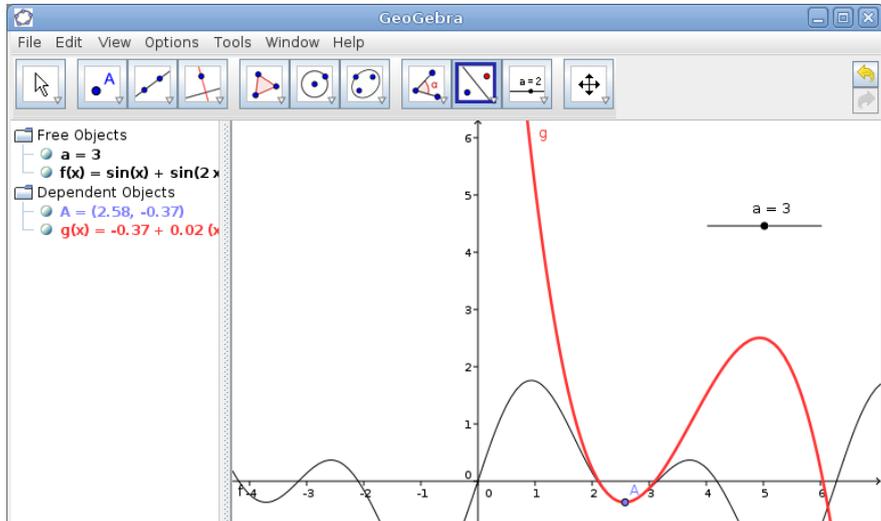
view: 60,0000, 322,500 scale: 1,00000, 1,00000

[knxm-icm2010....] LXTerminal [Octave graphic... Figure 1] 05:20

# GNU TeXmacs

The screenshot displays the GNU TeXmacs environment. The main window, titled "Help - Welcome to GNU TeXmacs", features a menu bar (File, Edit, Insert, Text, Format, Document, View, Go, Tools, Help) and a toolbar with various icons. A sidebar on the left contains a bull icon and text: "Thank you for using this p... find a few useful comments start T<sub>E</sub>X<sub>MACS</sub>. If you wan...". Below this are sections for "Help." and "Support." with links to external websites. A secondary window, titled "No name [1]", is open, showing a Maxima 5.21.1 session. The session text includes: "Maxima 5.21.1 http://maxima.sourceforge.net using Lisp GNU Common Lisp (GCL) GCL 2.6.7 (a.k.a. GCL) Distributed under the GNU Public License. See the file COPYING. Dedicated to the memory of William Schelter. The function bug\_report() provides bug reporting information." Three input-output pairs are shown: (%i1) diff(x^x,x,3); (%o1) x^x (x^x log(x) (log(x) + 1) + x^{x-1})^3 + x^{x^x} (x^{x-1} (log(x) + (x-1)/x)^2 + x^x log(x) (log(x) + 1)^3 + x^{x-1} (log(x) + 1)^2 + x^{x-1} (log(x) + 1) (log(x) + (x-1)/x) + x^{x-1} log(x) (log(x) + (x-1)/x) + 2x^{x-1} log(x) (log(x) + 1) + (2/x - (x-1)/x^2) x^{x-1} + 2x^{x-2}) + 3x^{x^x} (x^x log(x) (log(x) + 1) + x^{x-1} (x^x log(x) (log(x) + 1)^2 + x^{x-1} (log(x) + (x-1)/x) + x^{x-1} (log(x) + 1) + x^{x-1} log(x))) (%i2) integrate(1/(x^3+1),x); (%o2) -log(x^2-x+1)/6 + arctan((2x-1)/sqrt(3))/sqrt(3) + log(x+1)/3 (%i3) | The bottom status bar shows "generic maxima program roman 10 blue [idle]" and "session input start". The system tray at the bottom includes icons for [knxm-icm2010....], [Octave graphic...], Help - Welcome..., No name [1], and a clock showing 05:26.

# GeoGebra



# GeoProof

GeoProof

File Edit Create Tools Proofs Layers View Configuration Help

Document1

Graphic window Natural language

▼ Theorems

Names	Descriptions
Pythagore	$a^2 + b^2 = c^2$
Ceva	bidule

▼ Studied properties

Add

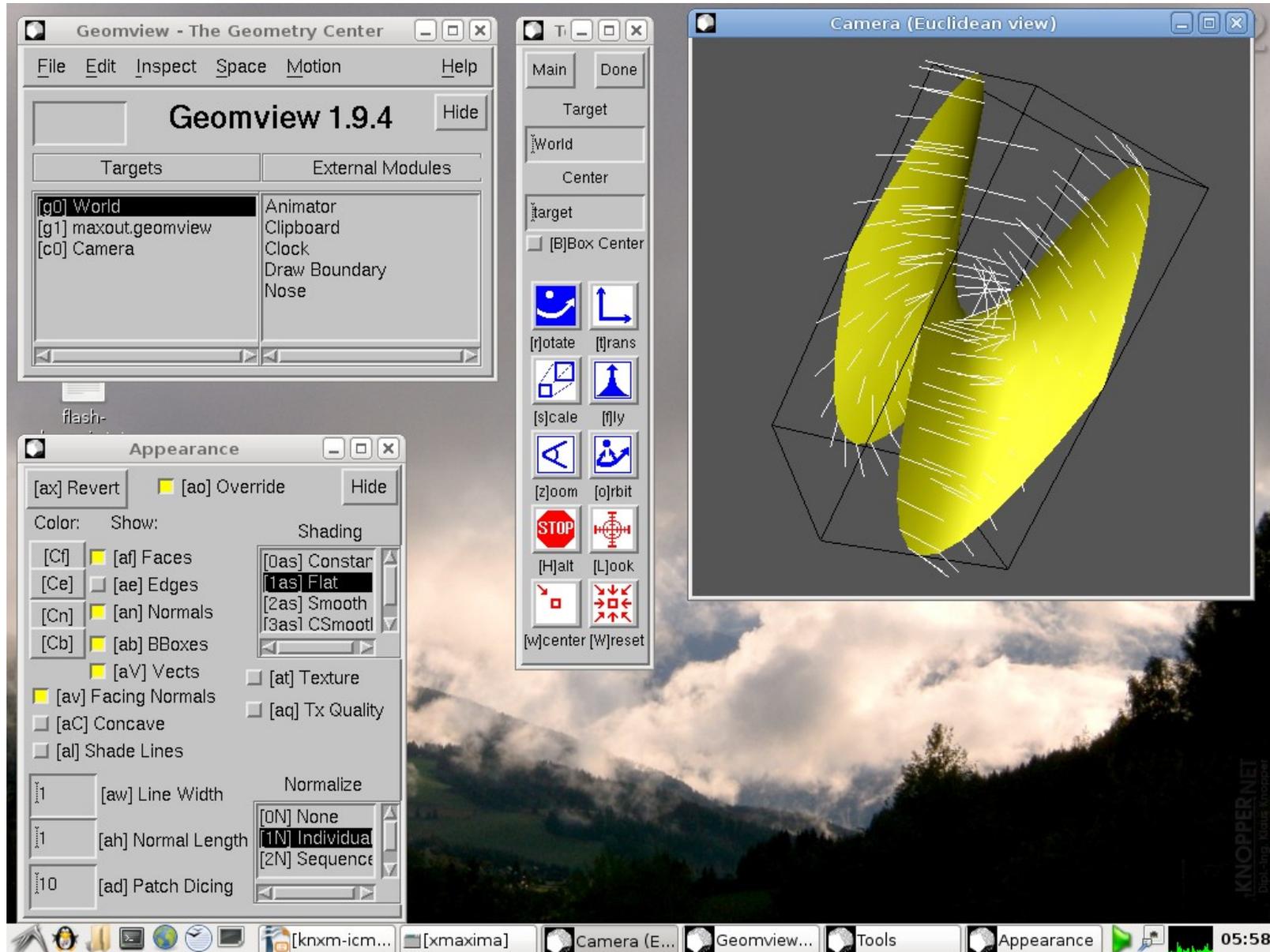
Descriptions

▼ Hypothesis

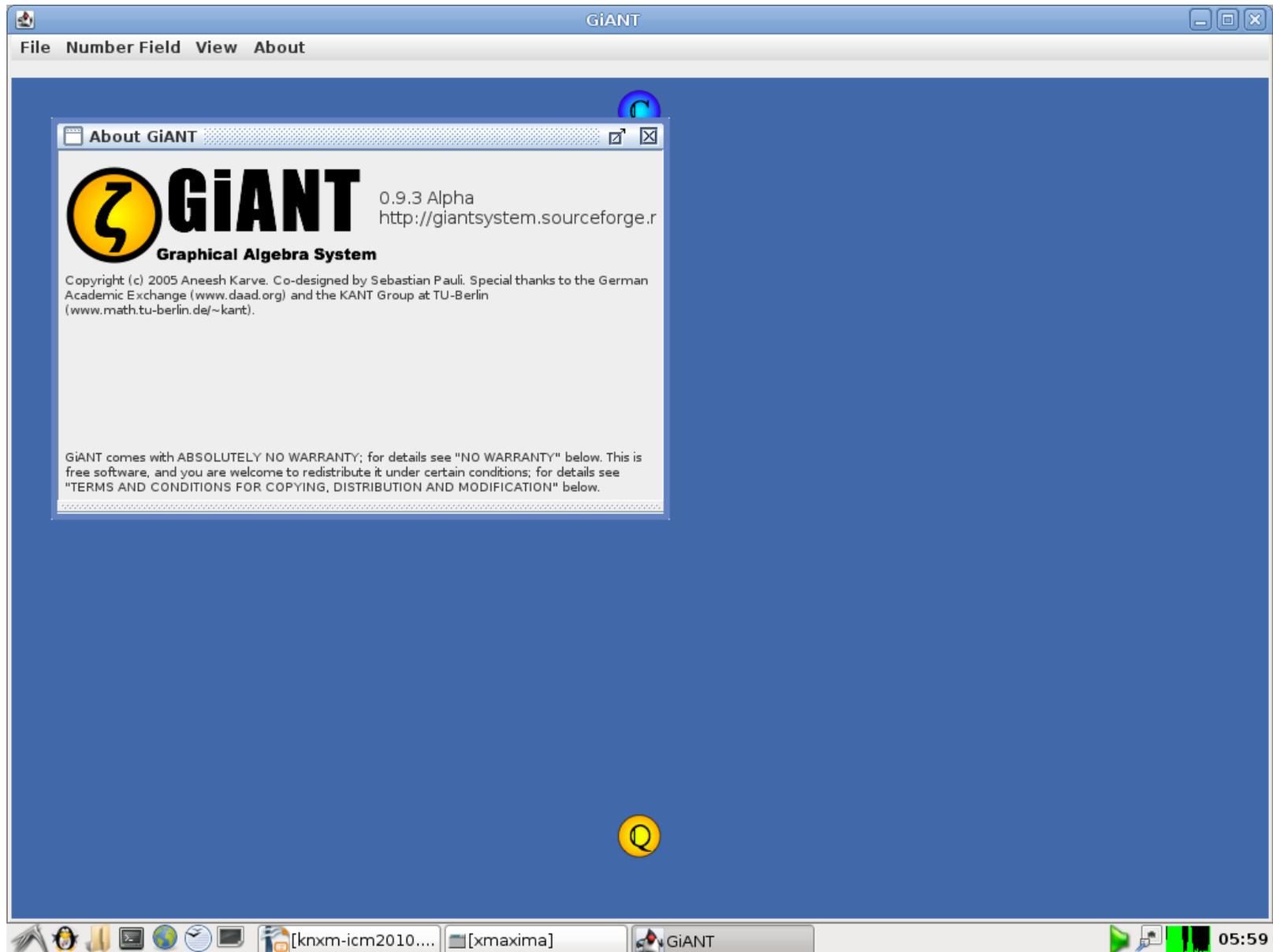
▼ Goals

▷ Input in natural language  
Segment created.

# Geomview



# GiANT



# Gnuplot

The image shows a Linux desktop environment with two windows. The top window is an LXTerminal window titled "LXTerminal" with a menu bar (File, Edit, Tabs, Help) and a command prompt. The terminal output shows the Gnuplot version and system information:

```
knoppix@Microknoppix:~$ gnuplot

G N U P L O T
Version 4.2 patchlevel 6
last modified Sep 2009
System: Linux 2.6.32.6

Copyright (C) 1986 - 1993, 1998, 2000
Thomas Williams, Colin Kelley and many others

Type `help` to access the on-line reference
The gnuplot FAQ is available from http://www.gnuplot.info
```

The bottom window is titled "Gnuplot (window id : 0)" and displays a 3D plot of a "Parametric Shell (clipped to limited z range)". The plot shows a complex, curved surface in a 3D coordinate system. The vertical axis (z) ranges from -3 to 1.5, and the horizontal axes range from -4 to 6. The surface is rendered with a green wireframe grid.

Overlaid on the bottom right of the terminal window is a PDF viewer window titled "xdvik: tutorial (10 pages)". The PDF content includes the title "L<sup>A</sup>T<sub>E</sub>X and the Gnuplot Plotting Program", the author "David Kotz", and a "Contents" section with the following items:

- 1 Introduction and History
- 2 Using gnuplot for L<sup>A</sup>T<sub>E</sub>X: a Tutorial

The desktop environment includes a taskbar at the bottom with various application icons and a system tray showing the time as 09:25.

# gfan

The image shows a Linux desktop environment with three windows open:

- Terminal Window (LXTerminal):** Displays a large polynomial expression:
$$\begin{aligned} & /123031576653028793*b*c^2-238469770182 \\ & 4649800233/492126306612115172*b*c^4+6 \\ & 87247554113068565/123031576653028793* \\ & *c^7-168347080149576119/12303157665302 \\ & 793*b^2*c+1309249343360924713/49212630 \\ & 576653028793*b^2*c^3-37148740265463762 \\ & 7326/123031576653028793*b^3-a+a*c^2, \\ & a^2-1+c+b^2\} \end{aligned}$$
- Manual Window (manual.dvi):** Displays the title page of the manual:

Gfan version 0.4: A User's Manual  
Anders Nedergaard Jensen \*  
May 31, 2009
- Presentation Window (gfan-presentation.pdf):** Displays the first slide of a presentation:

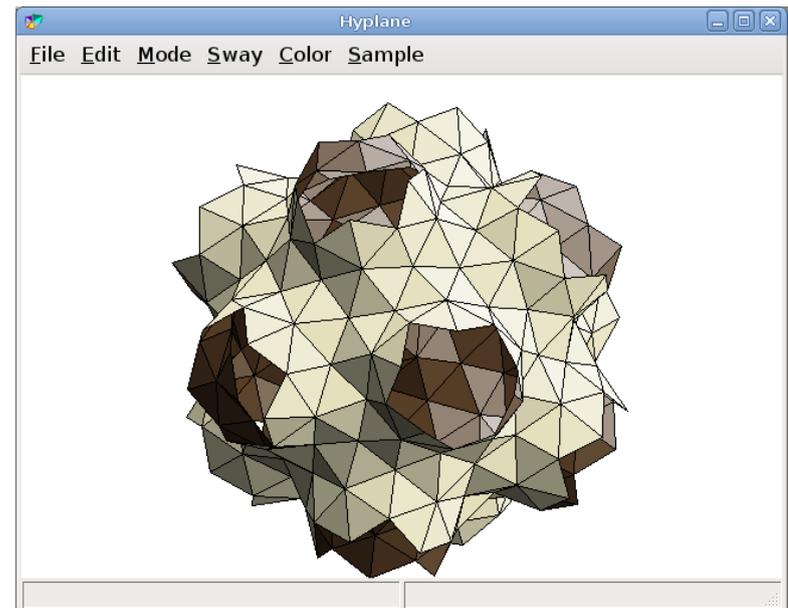
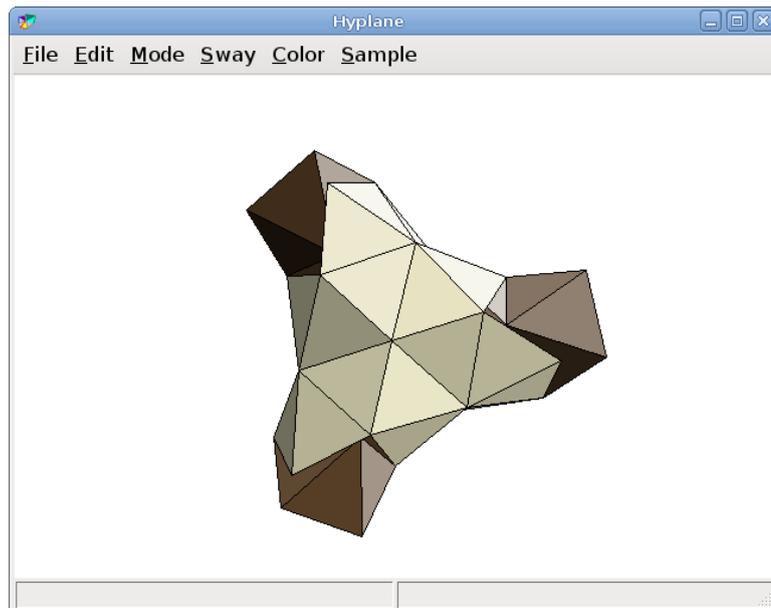
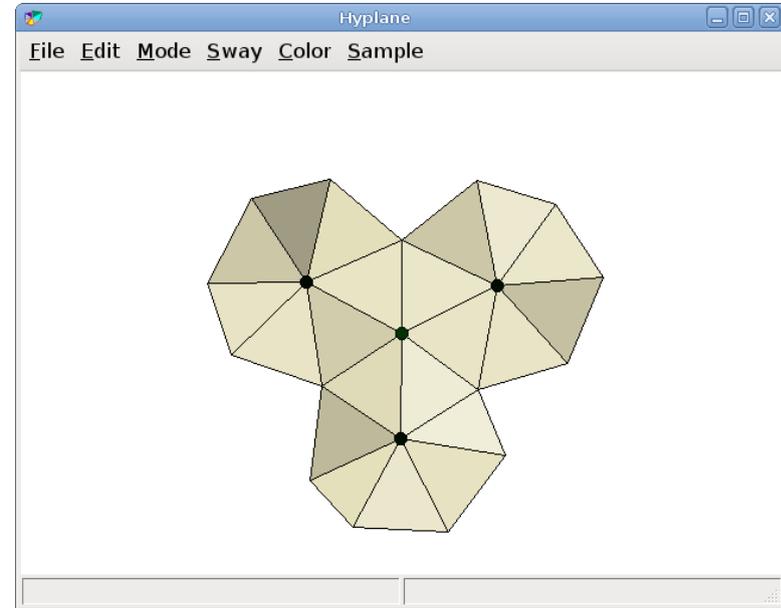
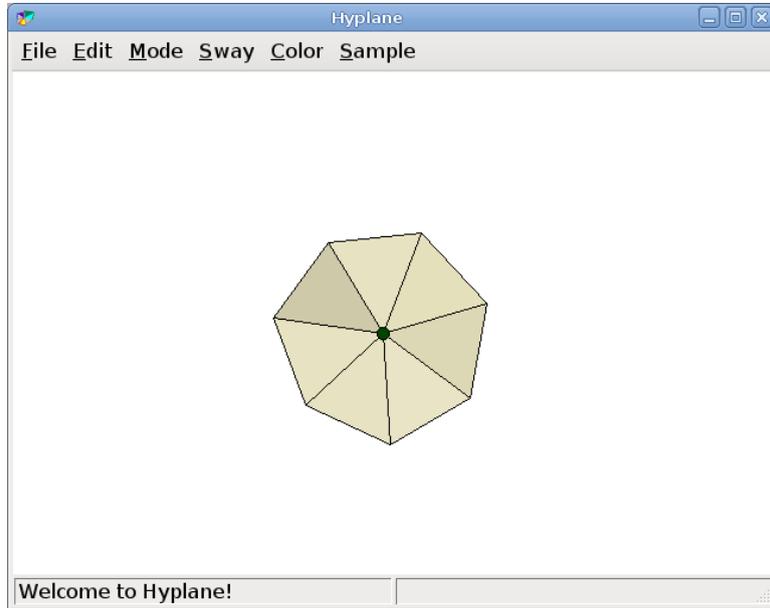
A presentation of the Gfan software package  
Anders Nedergaard Jensen \*  
Department of Mathematical Sciences, University of Aarhus and  
Institute for Operations Research, ETH Zürich  
8th April 2005

**Abstract**

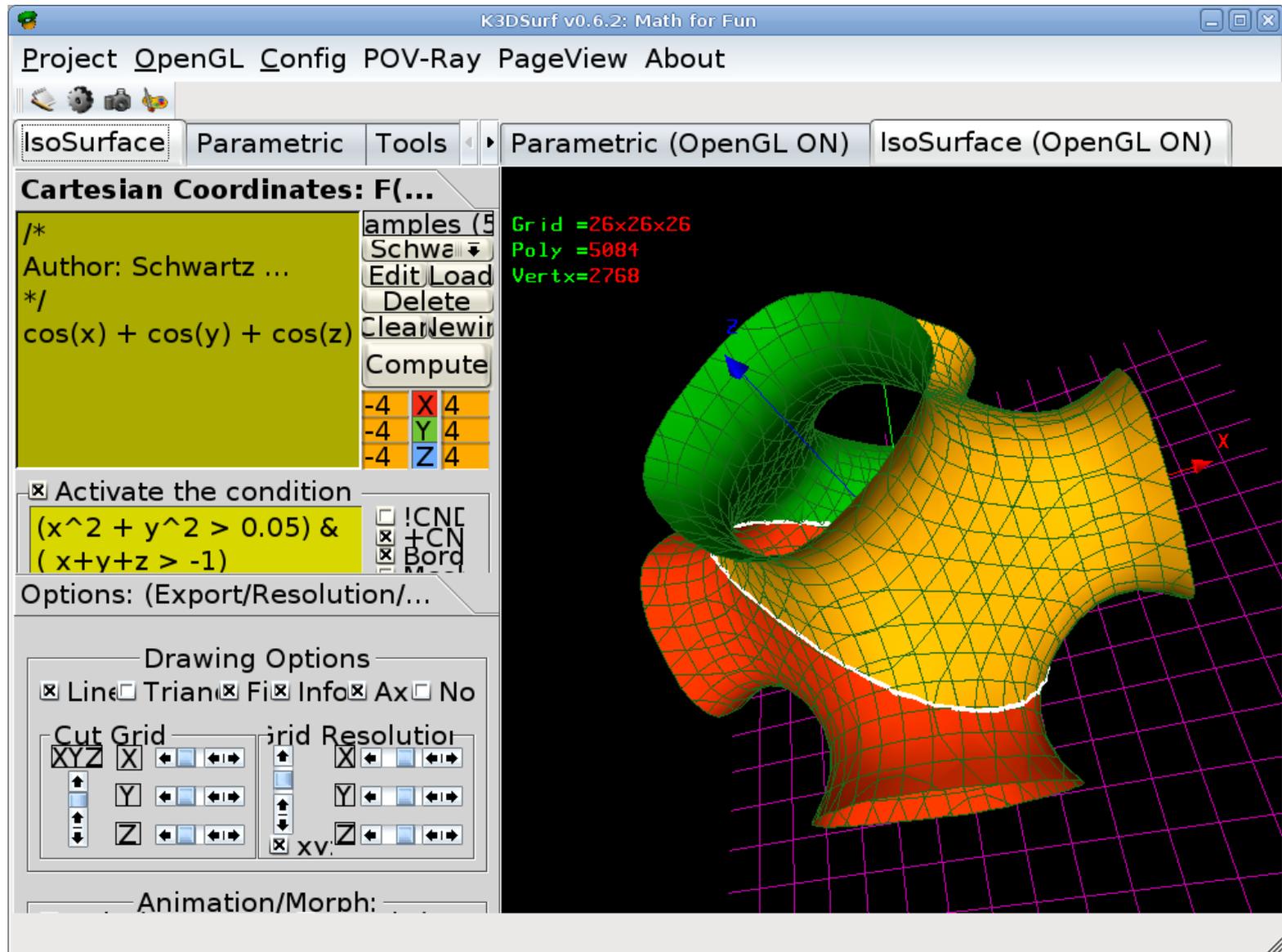
Gfan is a new software package for computing Gröbner fans of polynomial ideals in  $\mathbb{Q}[x_1, \dots, x_n]$ . We give a short description of this package. Some technical details are given to give the reader an idea of what the software can do.

The desktop taskbar at the bottom shows the following icons and text: [knxm-icm...], LXTerminal, [KNOPPIX/...], gfan-prese..., manual.dv..., ImageMagic..., and a system tray with a clock showing 10:56.

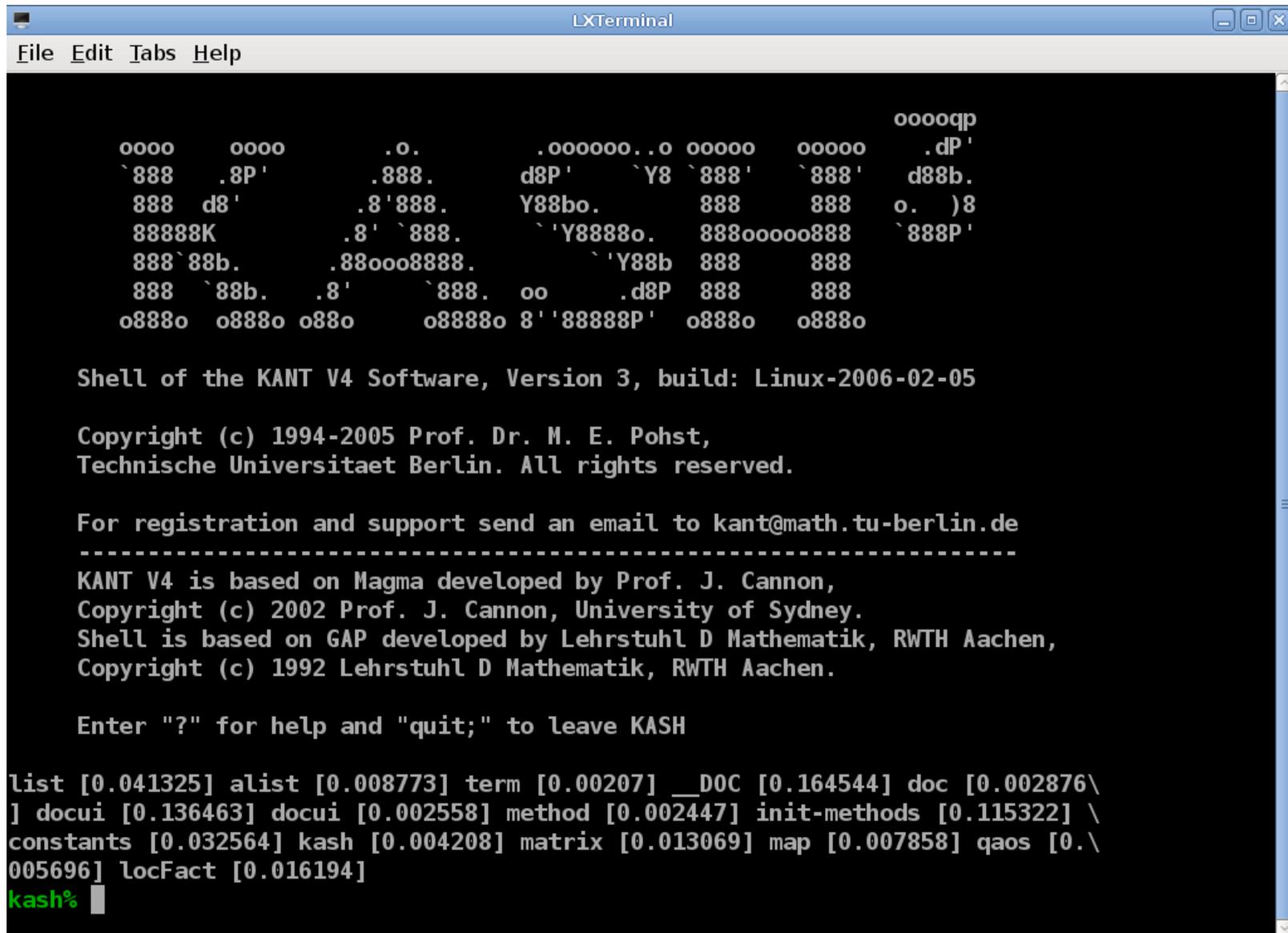
# Hyplane



# K3DSurf



# KASH/KANT



```
LXTerminal
File Edit Tabs Help

      oooooqp
o000  o000  .o.  .000000..o o0000  o0000  .dP'
`888  .8P'   .888.  d8P'   `Y8 `888'  `888'  d88b.
 888  d8'    .8'888.  Y88bo.   888  888  o.  )8
88888K    .8' `888.   `Y8888o.  888o000o888  `888P'
888`88b.   .88ooo8888.   `Y88b  888  888
888 `88b.  .8' `888.  oo   .d8P  888  888
o888o  o888o o88o    o8888o 8' '88888P'  o888o  o888o

Shell of the KANT V4 Software, Version 3, build: Linux-2006-02-05

Copyright (c) 1994-2005 Prof. Dr. M. E. Pohst,
Technische Universitaet Berlin. All rights reserved.

For registration and support send an email to kant@math.tu-berlin.de
-----
KANT V4 is based on Magma developed by Prof. J. Cannon,
Copyright (c) 2002 Prof. J. Cannon, University of Sydney.
Shell is based on GAP developed by Lehrstuhl D Mathematik, RWTH Aachen,
Copyright (c) 1992 Lehrstuhl D Mathematik, RWTH Aachen.

Enter "?" for help and "quit;" to leave KASH

list [0.041325] alist [0.008773] term [0.00207] __DOC [0.164544] doc [0.002876\
] docui [0.136463] docui [0.002558] method [0.002447] init-methods [0.115322] \
constants [0.032564] kash [0.004208] matrix [0.013069] map [0.007858] qaos [0.\
005696] locFact [0.016194]
kash% █
```

# KNOT

KNOPPIX 6.2

My Documents

MathDoc-Search

KNOPPIX-Math-Start

flash-knoppix.txt

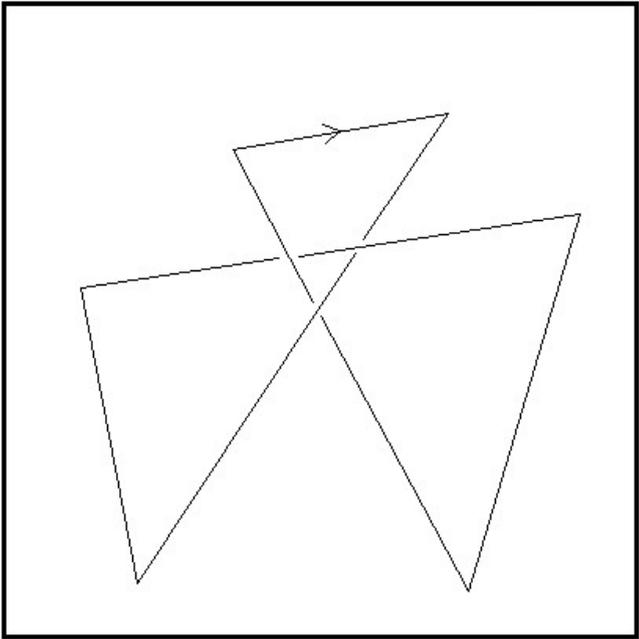
KNOPPIX

```
knot_opt
```

```
Relations:
3 1 -3 -2
1 2 -1 -3
2 3 -2 -1
Alexander matrix .
\pmatrix{
t & -1 & -t+1\cr
-t+1 & t & -1\cr
-1 & -t+1 & t\cr
}
Alexander matrix .
diagonal part: 0
diagonal part: t^{2}-t+1
Alexander Polynomial .
1-1+1
[]
```

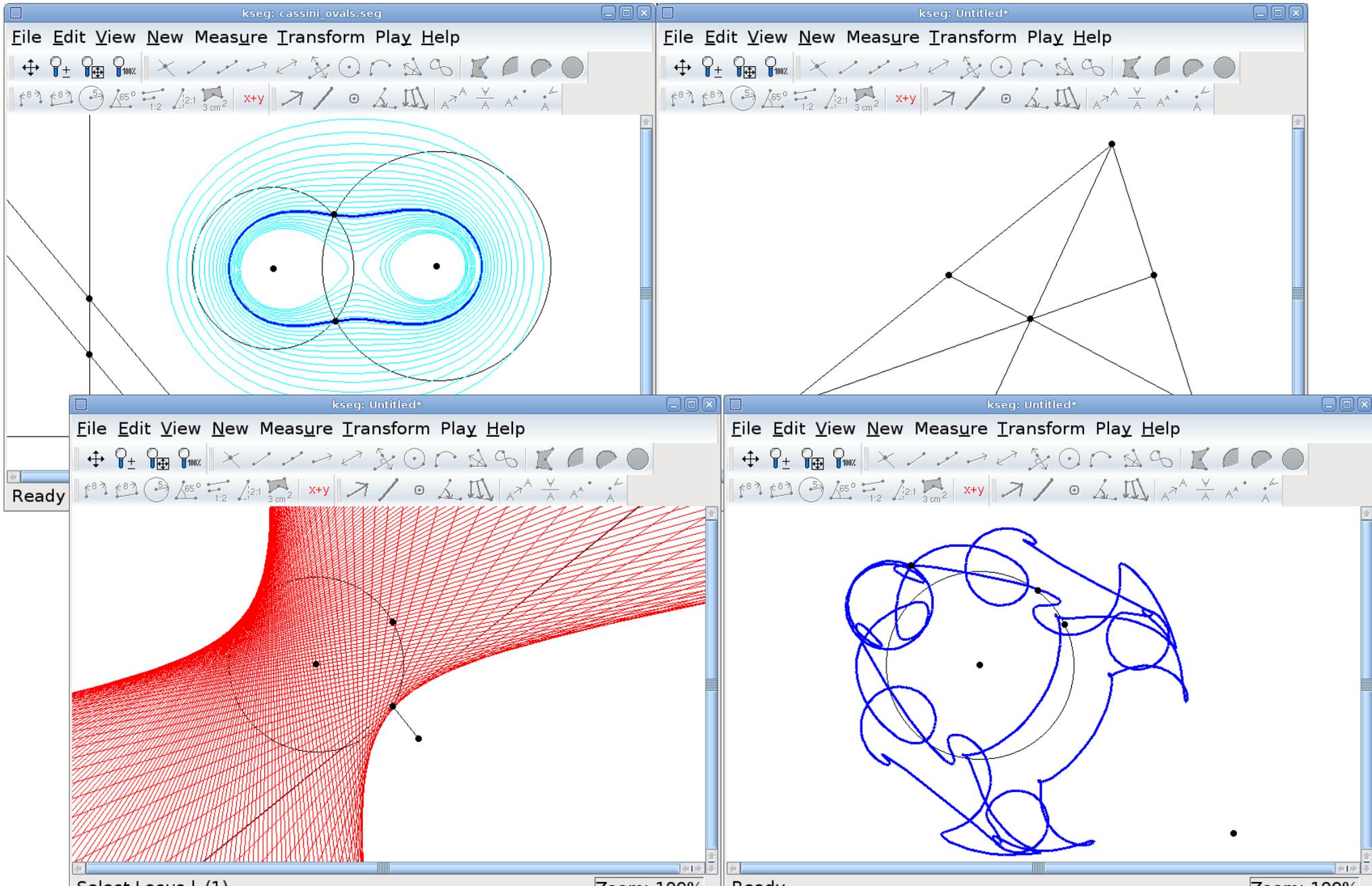
self

<b>Files</b>
<b>Edit Mode: Crossing</b>
<b>Effects on diagram</b>
<b>Invariants</b>
<b>Other options</b>
(x y)=(11 183)
<b>Quit</b>



[knxm-icm2010... knot\_opt self 06:07

# KSEG



# Kali

**Symmetry Group:** [Info] **KALI** [Quit]

**Draw** **Move** **Print**

Zoom Rotate Load

Angle Ratio Save

Grid Print To

Wallpaper Groups

*632 p6m			*2222 pmm
632 p6			2*22 cmm
3*3 p31m			2222 p2
*333 p3m1			22* pmg
333 p3			22x pgg
*442 p4m			x* cm
4*2 p4g			xx pg
442 p4			** pm
0 p1			

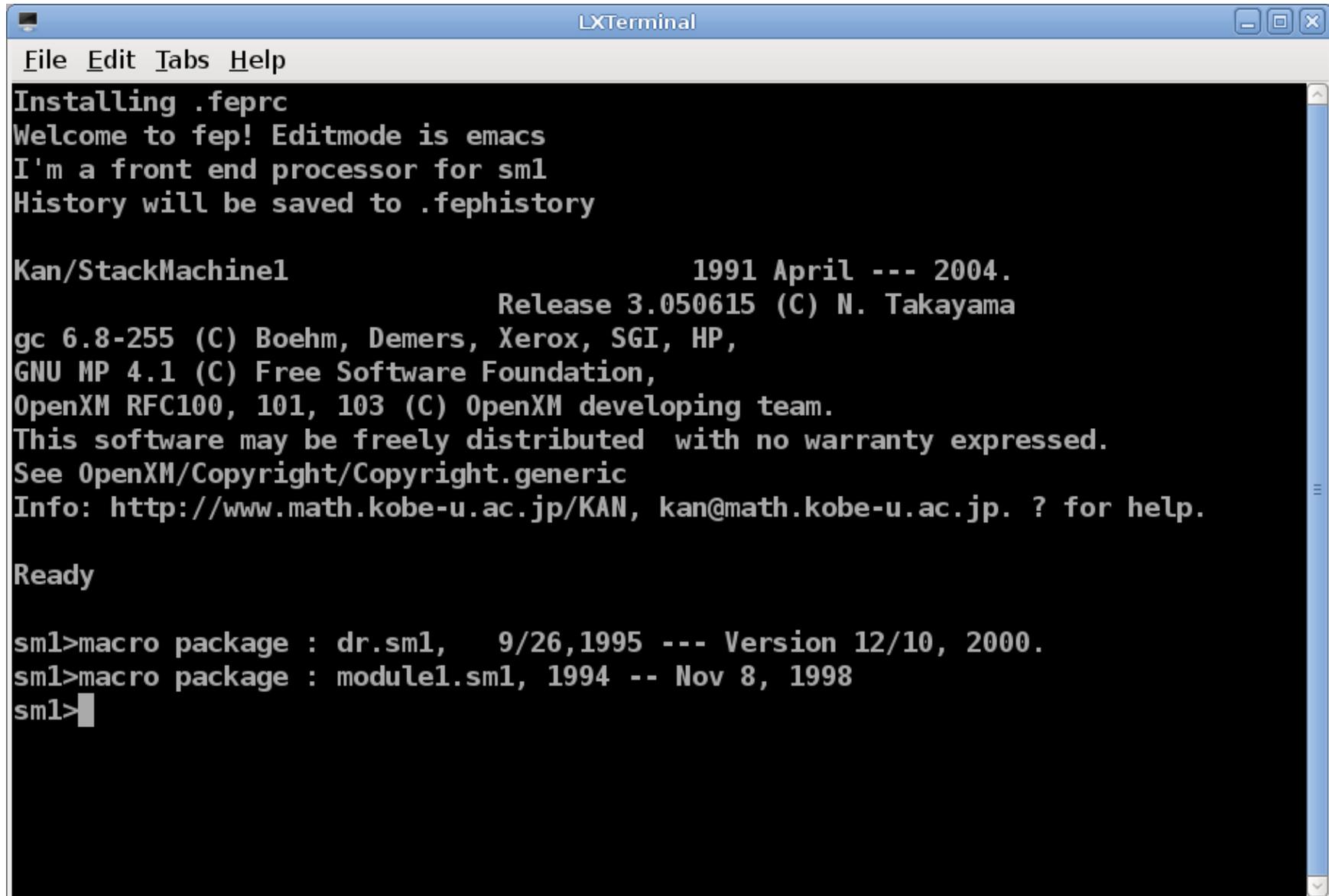
Left button: drag to draw/move  
Middle button: delete selected  
Right button: click to select

**kali** [PIX 6.2]

[knxm-icm20...] [LXTerminal] [KNOPPIX/Mat...] kali Symmetry Gro... 11:00

KNOPPIX.NET  
http://www.knoppix.net

# Kan/sm1



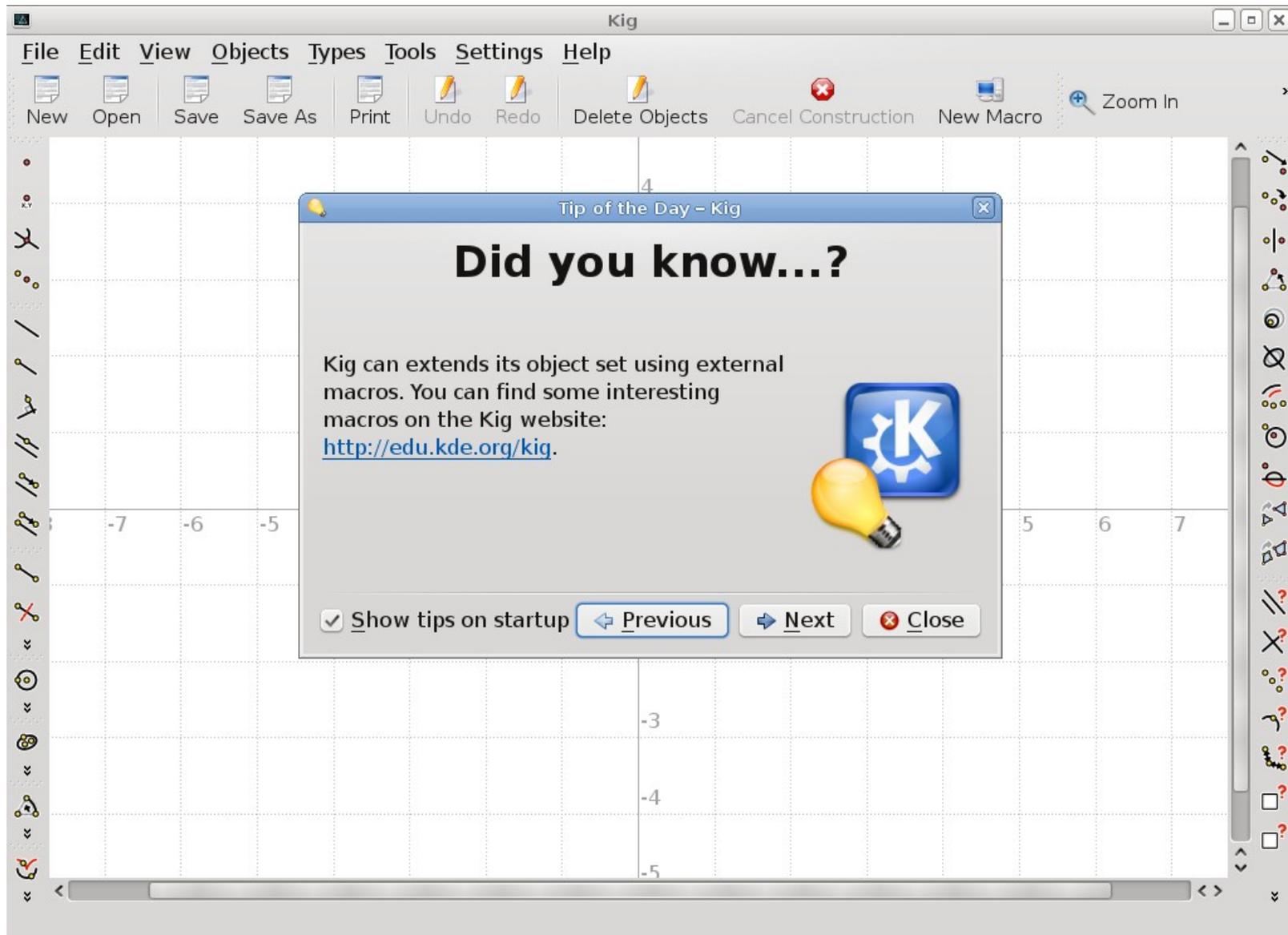
```
LXTerminal
File Edit Tabs Help
Installing .feprc
Welcome to fep! Editmode is emacs
I'm a front end processor for sm1
History will be saved to .fephistory

Kan/StackMachine1                      1991 April --- 2004.
                                         Release 3.050615 (C) N. Takayama
gc 6.8-255 (C) Boehm, Demers, Xerox, SGI, HP,
GNU MP 4.1 (C) Free Software Foundation,
OpenXM RFC100, 101, 103 (C) OpenXM developing team.
This software may be freely distributed with no warranty expressed.
See OpenXM/Copyright/Copyright.generic
Info: http://www.math.kobe-u.ac.jp/KAN, kan@math.kobe-u.ac.jp. ? for help.

Ready

sm1>macro package : dr.sm1, 9/26,1995 --- Version 12/10, 2000.
sm1>macro package : module1.sm1, 1994 -- Nov 8, 1998
sm1>
```

# Kig



# LiE

The image shows a Linux desktop environment with two windows. The background is a landscape with a cloudy sky and green trees. The taskbar at the bottom contains icons for a file manager, terminal, and other applications, with the system clock showing 11:05.

The **LXTerminal** window is titled "LXTerminal" and shows the following text:

```
File Edit Tabs Help
knoppix@Microknoppix:~$ lie

LiE version 2.2.2 created on Nov 28 2007 at 13:53:37
Authors: Arjeh M. Cohen, Marc van Leeuwen, Bert Lisser.
Purpose: development CWI

type '?help' for help information
type '?' for a list of help entries.
> ?help
> diagram(E8)
```

The terminal displays the Dynkin diagram for the E8 Lie algebra:

$$\begin{array}{cccccccc} & & 0 & 2 & & & & \\ & & | & & & & & \\ & & \vdots & & & & & \\ 0 & \text{---} & 0 \\ 1 & & 3 & & 4 & & 5 & & 6 & & 7 & & 8 \\ \text{E8} & & & & & & & & & & & & \\ > & & & & & & & & & & & & \end{array}$$

The **LiE-manual.pdf** window is titled "LiE-manual.pdf" and shows the first page of the manual. The page content is:

LiE MANUAL  
describing LiE version 2.2.2  
Marc A. A. van Leeuwen  
Arjeh M. Cohen  
Bert Lisser

LiE is a software package for Lie group theoretical computations  
developed by the  
Computer Algebra Group of  
CWI  
Kruislaan 413, 1098 SJ Amsterdam, The Netherlands

LiE LiE LiE LiE LiE LiE LiE LiE  
LiE LiE LiE LiE LiE LiE LiE LiE  
LiE LiE LiE LiE LiE LiE LiE LiE  
LiE LiE LiE LiE LiE LiE LiE LiE

# Macaulay2

The image shows a desktop environment with two main windows. The background is a grey desktop with the text "KNOPPIX 6.2" in the top right corner. The taskbar at the bottom contains icons for a terminal, a browser, and other applications, with the time "06:40" on the right.

The left window is an Emacs editor titled "emacs@Microknoppix". It displays the following text:

```
File Edit Options Buffers Tools Complete In/Out Signals Help
+ M2 --no-readline --print-width 79
Macaulay2, version 1.3.1
with packages: ConwayPolynomials, Elimination, Integral
PrimaryDecomposition, ReesAlgebra, Schur

i1 : R=ZZ/5[x,y,z];
i2 : describe R
o2 = ZZ
--[x..z, Degrees => {3
5
i3 : ]
```

The right window is a web browser titled "Macaulay2 - Iceweasel". The address bar shows "http://www.math.uiuc.edu" and the search bar contains "macaulay". The page content includes:

- Navigation links: Downloads | Getting Started | Documentation | Events
- Search section with input fields for "the web site:" and "just the documentation (version 1.3.1):"
- Buttons for "Getting Started" and "Screenshots"
- Documentation section with links for "Table of contents" and "Symbol index"
- Community section
- Announcement: "the Macaulay2 subversion server has moved."
- Introduction text: "Macaulay2 is a software system devoted to supporting research in algebraic geometry and commutative algebra, whose creation has been funded by the National Science Foundation since 1992"
- Events section: "Future events: 2010/8: workshop. Colorado College"
- Publications section: "Selected links: The Journal of Software for Algebra and Geometry: Macaulay2, Computations in algebraic geometry with Macaulay2, a book, Papers referring to Macaulay2, How to cite Macaulay2"
- Acknowledgments section: "Contributors, Software libraries, Funding, Macaulay, the predecessor of Macaulay2, Francis Macaulay, the"

The desktop taskbar at the bottom shows the following icons and text from left to right: a terminal icon, a browser icon, and the text "[knxm-icm2010...", "[LXTerminal]", "Macaulay2 - Ice...", "emacs@Microkn...", and the time "06:40".

# Maxima

The screenshot displays the Maxima software interface. The main window shows a 3D plot of a surface, likely a paraboloid, with axes ranging from -2 to 2. The plot is titled "Gnuplot" and the surface is labeled "x^2-y^2".

The terminal window shows the following output:

```
Maxima 5.17.1 http://maxima.sourceforge.net
Using Lisp GNU Common Lisp (GCL) GCL 2.6.7 (aka GCL)
Distributed under the GNU Public License. See the file COPYING.
Dedicated to the memory of William Schelter.
The function bug_report() provides bug reporting information.

(%i1) integrate(1/(x^3+1),x);
(%o1) 
$$-\frac{\log(x^2-x+1)}{6} + \frac{\arctan\left(\frac{2x-1}{\sqrt{3}}\right)}{\sqrt{3}} + \frac{\log(x+1)}{3}$$


(%i2) diff(x^x,x);
(%o2)  $x^x (x^x \log(x) (\log(x) + 1) + x^{x-1})$ 

(%i3)
```

The terminal window also shows the following commands and results:

```
• block([fpprec:100], bfloat(%pi)) yields result if we took sin of this we
• block([fpprec:100], sin(bfloat(%pi))) gives result

Maxima can solve equations. Click this line to solve the system.
• solve([x+y+z=5, 3*x-5*y=10, y+2*z=3], [x, y, z]); returns result
• solve(x^2-5*x+6 =0, x); produces result

Linear Algebra
For example, matrices can be entered and manipulated. Click these two lines.
• A:matrix([1, 2], [3, 4]); gives result
• B:matrix([1, 1], [1, 1]); gives result

The matrices can then be added, for example:
• A + B ; returns the sum result ...and multiplied.
• A . B ; gives the product result
• A^-1 evaluates to the inverse: result
• determinant(matrix([a, b], [c, d])) gives result
• Fib[0] : 0;
  Fib[1] : 1;
```

The terminal window also shows the following commands and results:

```
view: 49.0000, 42.0000 scale: 1.00000, 1.00000
```

# MD-jeep

The image shows a screenshot of a web browser window displaying the MD-jeep website. The browser's address bar shows the URL `http://www.antoniomucherino.it/en/mdjeep.php`. The website has a blue background with the title "MD-jeep" in yellow. A banner for "DATA MINING in Agriculture" is visible, along with a Springer logo and a "CLICK HERE!" button. The main text describes MD-jeep as software for solving distance geometry problems, mentioning the Discretizable Molecular Distance Geometry Problem (DMDGP) and the Branch & Prune (BP) algorithm. A table of links is shown at the bottom left of the page.

MD-jeep is a software for solving distance geometry problems. It is able to solve a subclass of instances of the problem for which a discrete reformulation can be supplied. We refer to this subclass of instances as the *Discretizable Molecular Distance Geometry Problem (DMDGP)*. We employ a *Branch & Prune (BP)* algorithm for the solution of DMDGPs.

MD-jeep is the result of a strong collaboration with [Maculan](#). Many details regarding the discretization process are available in the following publications (the list of the most recent papers is available [here](#)).

MD-jeep is distributed under the [GNU General Public License](#). If you use MD-jeep in your software, please let us know!

name
<a href="#">MD-jeep version 0.1</a>
<a href="#">test problems 1</a>

```
knoppix@Microknoppix:~$ mdjeep
MD-jeep v0.1
GNU General Public License
Copyright (C) Mucherino, Liberti, Lavor, Maculan
bp: too few arguments
syntax: ./bp [options] instance.nmr
NMR file format: list of distances [i j iatom jatom
  where:
* i is the label of the first atom
* j is the label of the second atom
* iatom is the name of the atom i (3 letter format)
* jatom is the name of the atom j (3 letter format)
```

# Normaliz

The screenshot displays a Linux desktop environment. In the foreground, a PDF viewer window titled "Normaliz2.2Documentation.pdf" is open, showing the title page and a table of contents. The terminal window in the background shows the execution of the "normbig" command, which displays the program's version (2.2), copyright information (2007-2009), and authors (Winfried Bruns, Bogdan Ichim, Christof Soeger). The terminal also prompts the user to enter an input file name.

**Terminal Output:**

```
knoppix@Microknoppix:~$ normbig
Normaliz 2.2
Copyright (C) 2007,2008,2009 Winfried Bruns, Bogdan Ichim
With contributions by Christof Soeger
This program comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
See the file COPYING for details.
Enter the input file name or -? for help
```

**PDF Viewer Content:**

**NORMALIZ**  
**VERSION 2.2**

WINFRIED BRUNS AND BOGDAN ICHIM  
WITH CONTRIBUTIONS BY CHRISTOF SÖGER

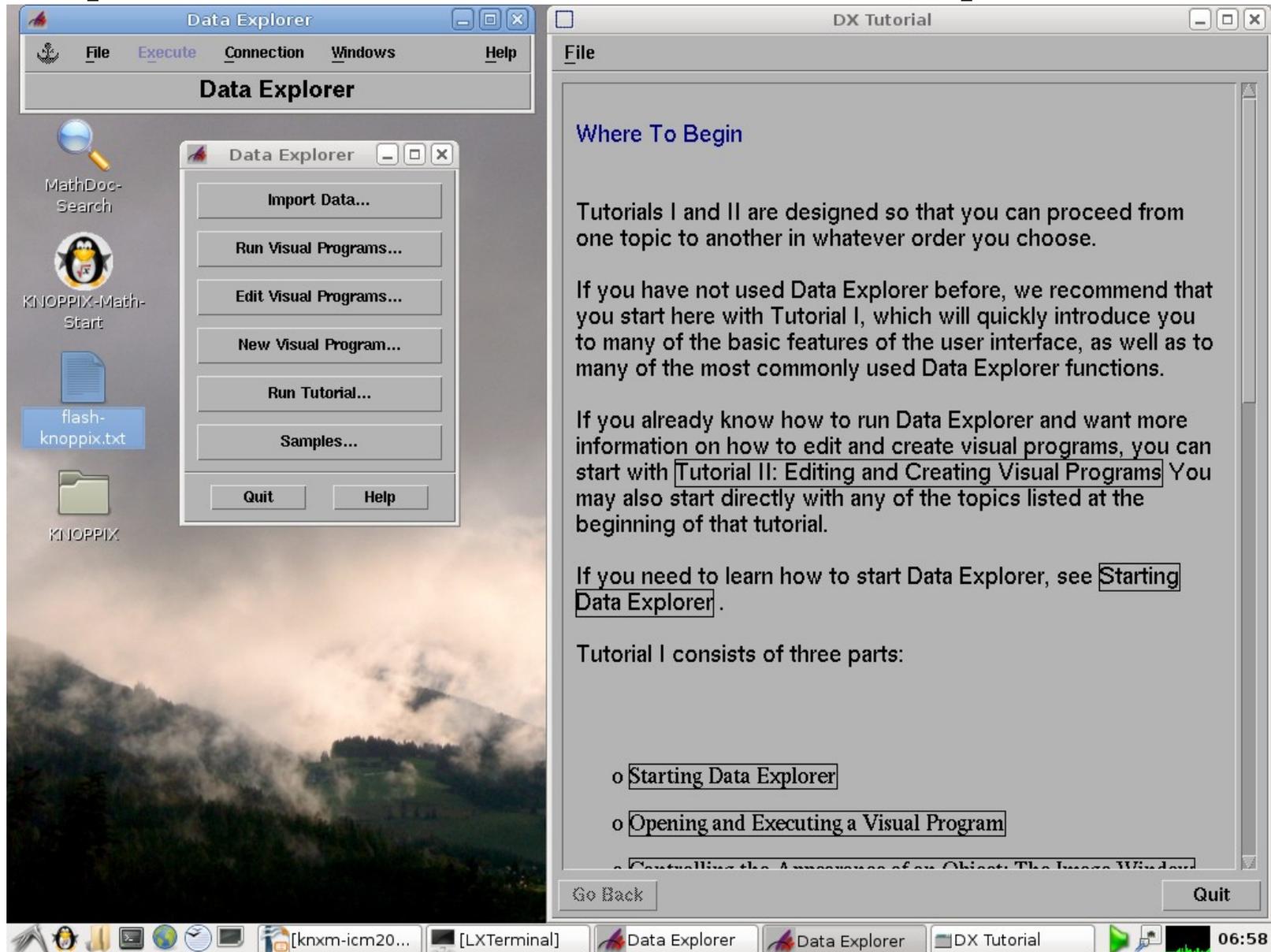
ABSTRACT. This manual describes the version 2.2 of NORMALIZ, a program for solving linear systems of inequalities. It is an upgrade of the program Normaliz, developed originally by Winfried Bruns and Robert Koch.

**CONTENTS**

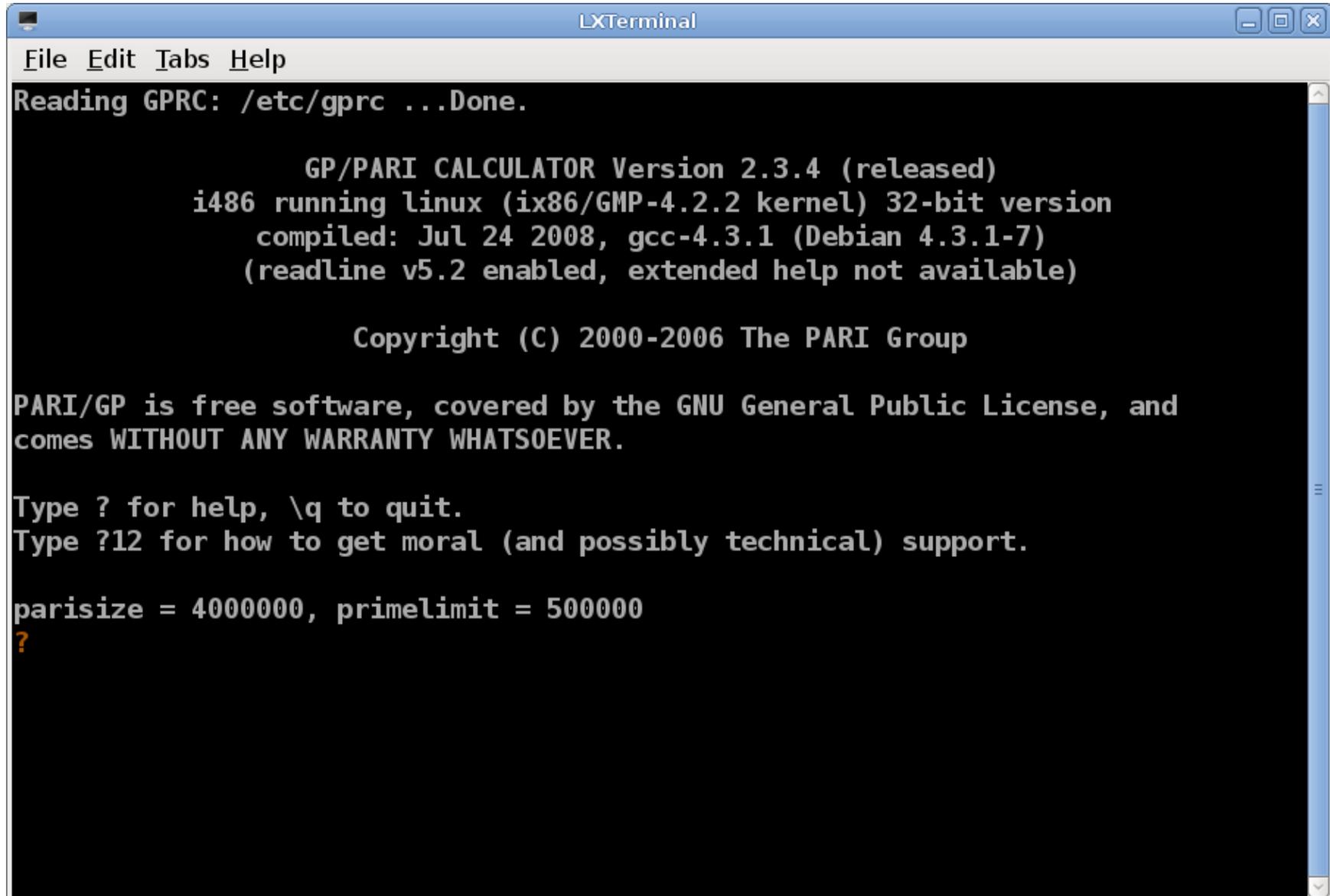
1. Introduction	2
2. Changes relative to version 2.0	2
3. Numerical limitations	4
4. Distribution	4
5. Compilation	4
6. The input file	5
7. Running Normaliz	7
8. The output file	10
9. Optional output files	11
10. Examples	12



# OpenDX Data Explorer



# PARI/GP



```
LXTerminal
File Edit Tabs Help
Reading GPRC: /etc/gprc ...Done.

      GP/PARI CALCULATOR Version 2.3.4 (released)
i486 running linux (ix86/GMP-4.2.2 kernel) 32-bit version
      compiled: Jul 24 2008, gcc-4.3.1 (Debian 4.3.1-7)
      (readline v5.2 enabled, extended help not available)

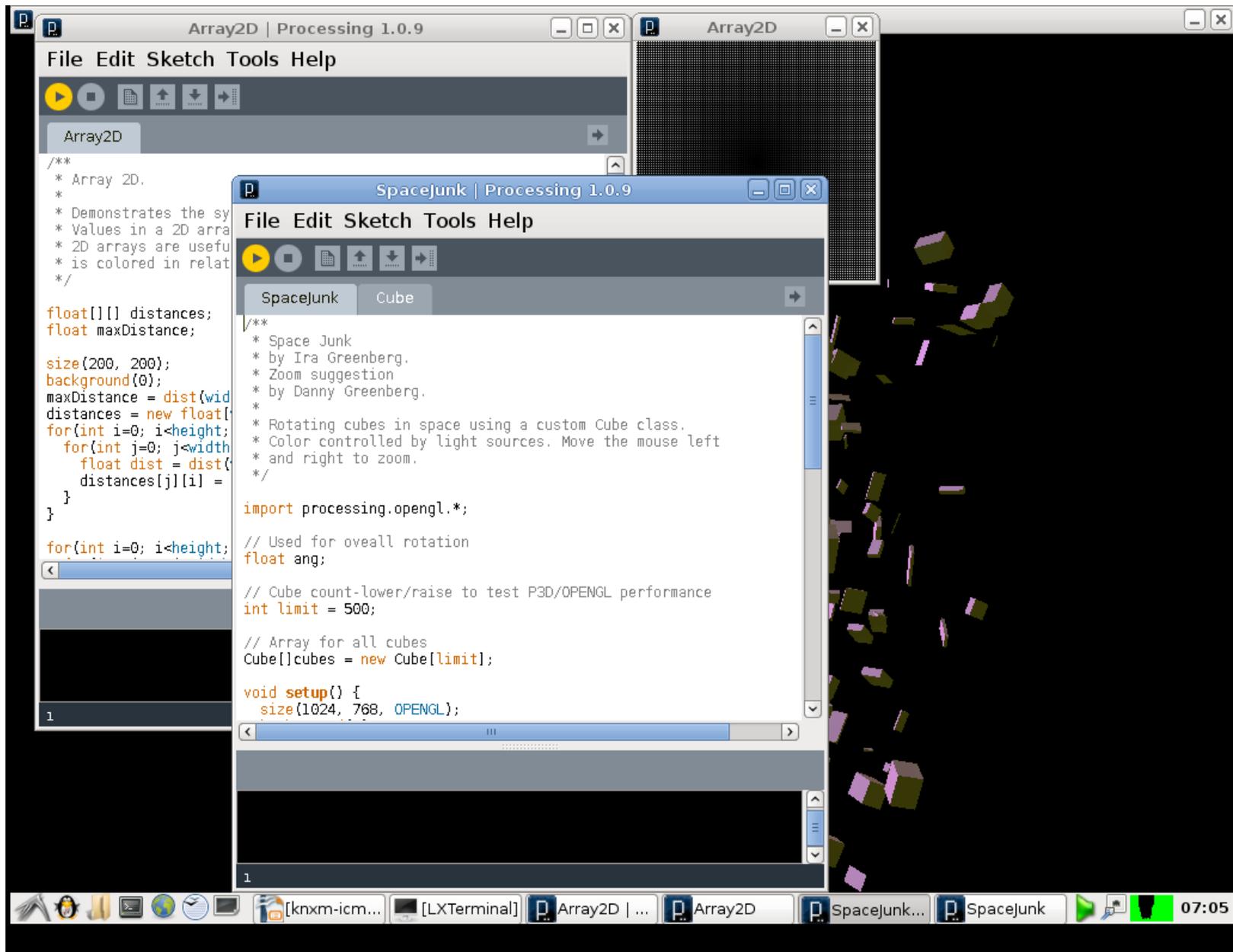
      Copyright (C) 2000-2006 The PARI Group

PARI/GP is free software, covered by the GNU General Public License, and
comes WITHOUT ANY WARRANTY WHATSOEVER.

Type ? for help, \q to quit.
Type ?12 for how to get moral (and possibly technical) support.

parisize = 4000000, primelimit = 500000
?
```

# Processing



# PyGeo

PyGeo Home - Iceweasel

File Edit View History Bookmarks Tools Help

http://pygeo.sourceforge.net/ Google

Meistbesuchte Seit... KNOPPIX

PyGeo: a dynamic geometry toolkit

Home What Distinguishes Screenshots Documentation Links

## Welcome to PyGeo

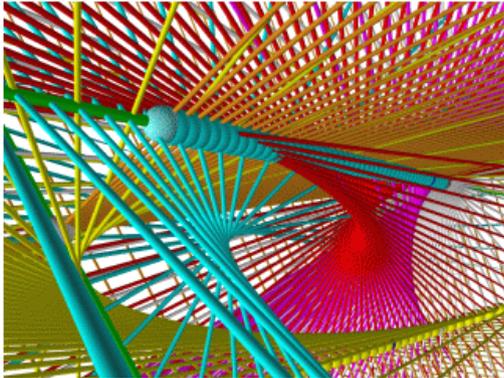
### What is PyGeo?

Quoting from the [PyGeo Overview](#) document:

PyGeo is most fundamentally a framework for the creation of dynamic geometric constructions - i.e. constructions which embody defined and persistent geometric relationships responsive to real time on-screen interactivity.

PyGeo is, further, an implementation of this underlying abstract framework - exposing a range of geometric objects as the building blocks for virtual, dynamic geometric constructions.

The focus is away from Euclidian geometry and metrics, and toward later geometric and mathematical developments - particularly those connected with projective geometry of real space, and the geometry of complex numbers on the plane and on the unit (Riemann) sphere.



*Line Arrays*

**News:**

**January 2006. Once again, new release for the new year. [Download](#)**

**Quote :**

Done

knxm-icm2010... PyGeo Home - I... LXTerminal 11:27

# Qhull

The screenshot shows a web browser window displaying the Qhull website. The browser's address bar shows `http://www.qhull.org/`. The page content includes a navigation menu, a search bar, and a list of links. A 3D visualization of a sphere with a Delaunay triangulation is shown in a window titled "Camera (Euclidean view)".

**Qhull** computes the convex hull, Delaunay triangulation, Voronoi diagram, and furthest-site Delaunay triangulation, and furthest-site Voronoi diagram in two and higher dimensions. Qhull implements the Quickhull algorithm and is designed to be robust against roundoff errors from floating point arithmetic. It computes the convex hull.

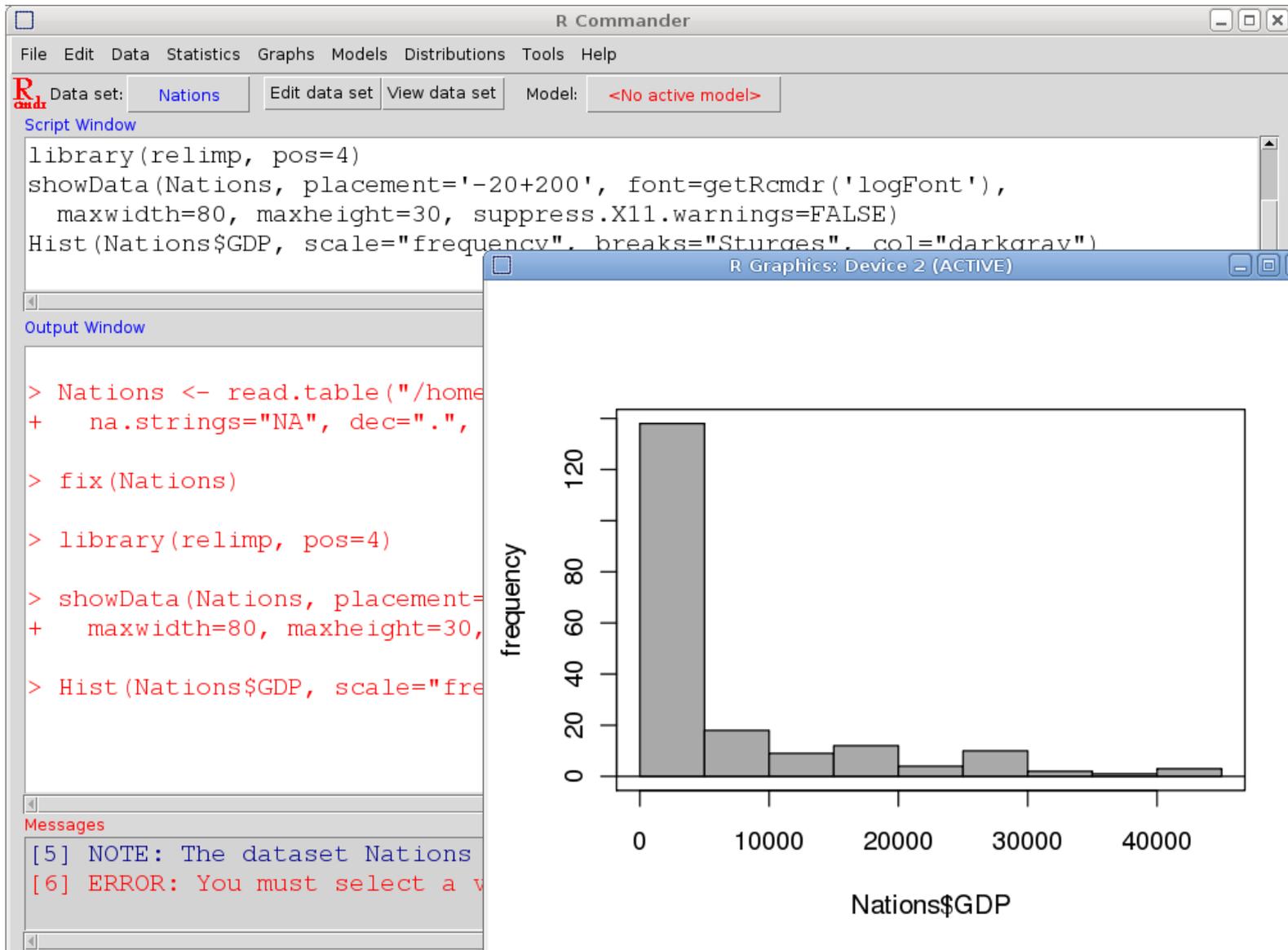
Qhull does *not* support constrained Delaunay triangulation, generation of non-convex objects, or medium-sized input.

A serious bug was found in Qhull 2003.1. Please upgrade.

- [News](#) and [Bugs](#) about Qhull 2010.1 2010/01/14
- [Download](#) Qhull
- [Examples](#) of Qhull output
- [Gitorious](#) C++ interface to Qhull
- www
- [How](#) is Qhull used?
- [CiteSeer](#) and [Google Scholar](#) references
- [Google](#) Qhull, Qhull [Images](#), [Qhull](#)
- [MATLAB](#) uses Qhull for their [convex hull](#) [searchn](#) [voronoi](#). MATLAB R14
- The [Debian build](#) of [GNU Octave](#)
- [Mathematica](#)'s Delaunay interface
- [Geomview](#) for 3-D and 4-D views

```
knoppix@Microknoppix:~$ rbox 1000 s | qhull Tv G FA > output
qhull output completed. Verifying that 1000 points are
below 2.1e-15 of the nearest facet.
knoppix@Microknoppix:~$ geomview output
```

# R commander



The screenshot displays the R Commander interface. The top menu bar includes File, Edit, Data, Statistics, Graphs, Models, Distributions, Tools, and Help. The Data set is 'Nations' and the Model is '<No active model>'. The Script Window contains the following R code:

```
library(relimp, pos=4)
showData(Nations, placement='-20+200', font=getRcmdr('logFont'),
         maxwidth=80, maxheight=30, suppress.X11.warnings=FALSE)
Hist(Nations$GDP, scale="frequency", breaks="Sturges", col="darkgray")
```

The Output Window shows the execution of these commands:

```
> Nations <- read.table("/home
+   na.strings="NA", dec=".",
> fix(Nations)
> library(relimp, pos=4)
> showData(Nations, placement=
+   maxwidth=80, maxheight=30,
> Hist(Nations$GDP, scale="fre
```

The Messages window shows the following output:

```
[5] NOTE: The dataset Nations
[6] ERROR: You must select a v
```

The R Graphics: Device 2 (ACTIVE) window displays a histogram of Nations\$GDP. The y-axis is labeled 'frequency' and ranges from 0 to 120. The x-axis is labeled 'Nations\$GDP' and ranges from 0 to 40000. The histogram shows a highly right-skewed distribution with a very high frequency for low GDP values and a long tail extending to the right.

Nations\$GDP Range	Frequency
0 - 5000	120
5000 - 10000	20
10000 - 15000	10
15000 - 20000	15
20000 - 25000	5
25000 - 30000	15
30000 - 35000	5
35000 - 40000	5

# Reduce

The screenshot shows a Knoppix 6.2 desktop environment. A terminal window titled "reduce" is open, displaying the following content:

0.00+0.08 secs      reduce

File Edit Font Break Load Package Switch Help

REDUCE, 15-sep-08 ...

1: `int(1/(x^3+1), x);`

$$\frac{2\sqrt{3}\arctan\left(\frac{2x-1}{\sqrt{3}}\right) - \log(x^2 - x + 1) + 2\log(x + 1)}{6}$$

2: `(x+y+z)^2;`

$$x^2 + 2xy + 2xz + y^2 + 2yz + z^2$$

3: `u:=(x+y+z)^2;`

$$u := x^2 + 2xy + 2xz + y^2 + 2yz + z^2$$

4: `df(ws, x);`

$$2(x + y + z)$$

5:

The desktop background is a landscape image. The taskbar at the bottom shows the LXTerminal icon and the system clock displaying 07:24.



# SAGE

doc\_browser\_0 -- Sage - Iceweasel

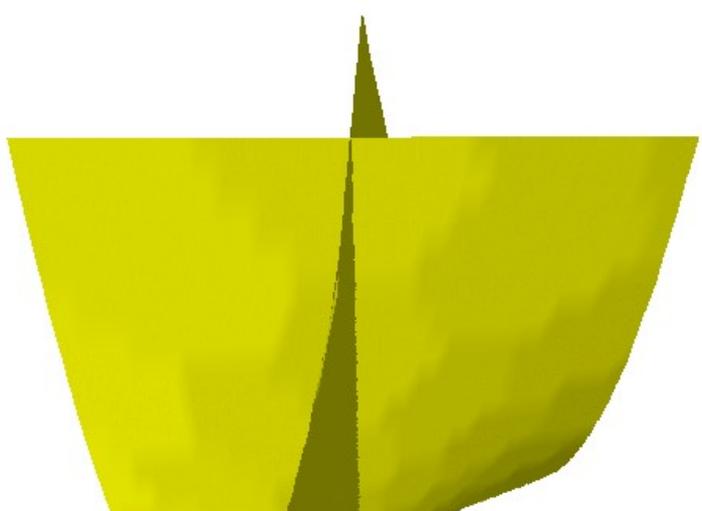
File Edit View History Bookmarks Tools Help

http://localhost:8000/doc/live/tutorial/tour\_plotting.html

Yellow Whitney's umbrella:

```
u, v = var('u,v')
fx = u*v
fy = u
fz = v^2
parametric_plot3d([fx, fy, fz], (u, -1, 1), (v, -1, 1),
    frame=False, color="yellow")
```

evaluate



Jmol script terminated

jsMath

[LXTerminal] [knxm-icm20... LXTerminal] Active Worksh... doc\_browser\_... 07:55

# Scilab

The image shows a screenshot of the Scilab software interface running on a Linux desktop (KNOPPIX 6.2). The interface consists of several windows:

- Console Window:** Displays the Scilab startup sequence and the execution of a script. The script reads data from 'data.txt' and plots it. The output shows a 5x2 matrix of data points.
- Graphic Window:** Displays a line plot of the data from the console. The x-axis ranges from 1.0 to 5.0, and the y-axis ranges from 2 to 11. The plot shows a blue line connecting the points (1,2), (2,3), (3,7), (4,8), and (5,11).

**Console Output:**

```
Consortium Scilab (DIGITEO)
Copyright (c) 1989-2009 (INRIA)
Copyright (c) 1989-2007 (ENPC)

Startup execution:
loading initial environment

-->data = read('data.txt', -1, 2)
data =

    1.    2.
    2.    3.
    3.    7.
    4.    8.
    5.   11.

-->plot(data(:,1), data(:,2))

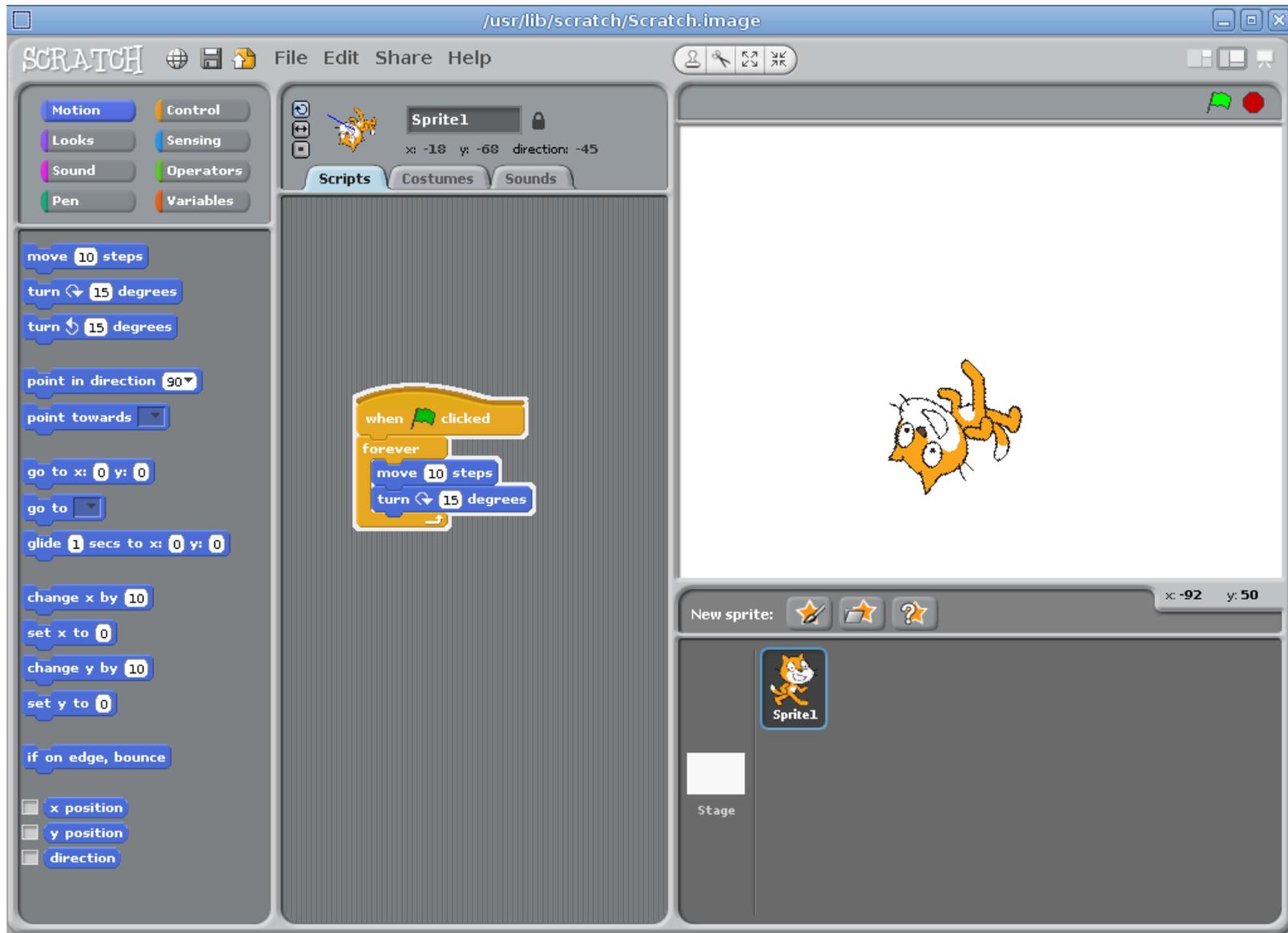
WARNING: Due to your configuration limitations, Scilab switched in a mode where mixing uicontrols and graphics is not available. Type "help usecanvas" for more information.

-->|
```

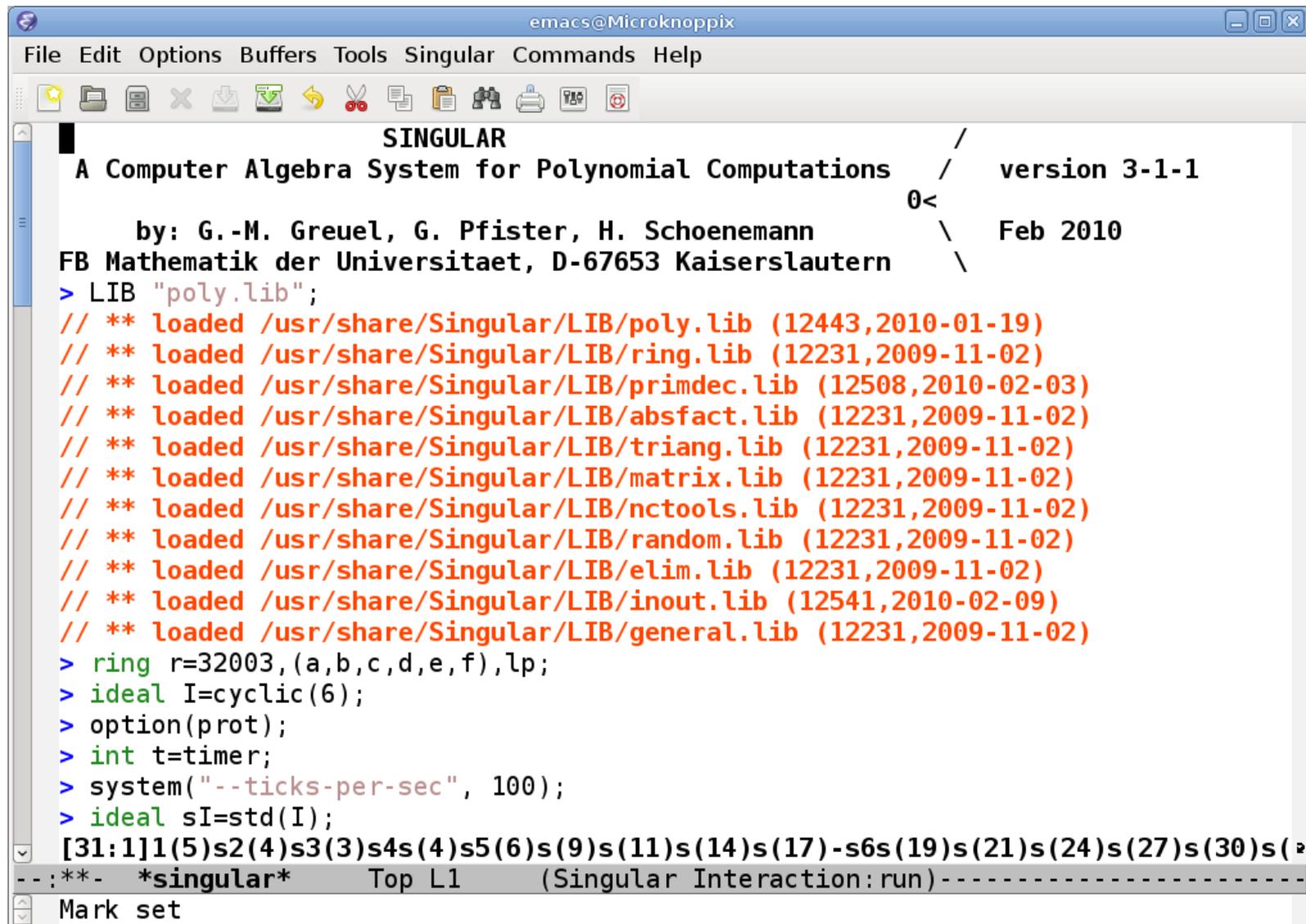
**Graphic Window Data:**

x	y
1.0	2.0
2.0	3.0
3.0	7.0
4.0	8.0
5.0	11.0

# Scratch



# Singular



The image shows a terminal window titled 'emacs@Microknoppix' with a menu bar (File, Edit, Options, Buffers, Tools, Singular, Commands, Help) and a toolbar. The main content is the Singular system's startup screen and a series of commands. The startup screen includes the title 'SINGULAR', a description 'A Computer Algebra System for Polynomial Computations', version '3-1-1', authors 'G.-M. Greuel, G. Pfister, H. Schoenemann', and location 'FB Mathematik der Universitaet, D-67653 Kaiserslautern'. The date 'Feb 2010' is also shown. The user enters the command '> LIB "poly.lib";', which triggers a list of loaded libraries with their paths and dates. Subsequent commands include '> ring r=32003,(a,b,c,d,e,f),lp;', '> ideal I=cyclic(6);', '> option(prot);', '> int t=timer;', and '> system("--ticks-per-sec", 100);'. The final command is '> ideal sI=std(I);', which results in a long output line: '[31:1]1(5)s2(4)s3(3)s4s(4)s5(6)s(9)s(11)s(14)s(17)-s6s(19)s(21)s(24)s(27)s(30)s(31)'. The status bar at the bottom shows 'Mark set'.

```
emacs@Microknoppix
File Edit Options Buffers Tools Singular Commands Help

SINGULAR
A Computer Algebra System for Polynomial Computations / version 3-1-1
0<
by: G.-M. Greuel, G. Pfister, H. Schoenemann \ Feb 2010
FB Mathematik der Universitaet, D-67653 Kaiserslautern \

> LIB "poly.lib";
// ** loaded /usr/share/Singular/LIB/poly.lib (12443,2010-01-19)
// ** loaded /usr/share/Singular/LIB/ring.lib (12231,2009-11-02)
// ** loaded /usr/share/Singular/LIB/primdec.lib (12508,2010-02-03)
// ** loaded /usr/share/Singular/LIB/absfact.lib (12231,2009-11-02)
// ** loaded /usr/share/Singular/LIB/triang.lib (12231,2009-11-02)
// ** loaded /usr/share/Singular/LIB/matrix.lib (12231,2009-11-02)
// ** loaded /usr/share/Singular/LIB/nctools.lib (12231,2009-11-02)
// ** loaded /usr/share/Singular/LIB/random.lib (12231,2009-11-02)
// ** loaded /usr/share/Singular/LIB/elim.lib (12231,2009-11-02)
// ** loaded /usr/share/Singular/LIB/inout.lib (12541,2010-02-09)
// ** loaded /usr/share/Singular/LIB/general.lib (12231,2009-11-02)
> ring r=32003,(a,b,c,d,e,f),lp;
> ideal I=cyclic(6);
> option(prot);
> int t=timer;
> system("--ticks-per-sec", 100);
> ideal sI=std(I);
[31:1]1(5)s2(4)s3(3)s4s(4)s5(6)s(9)s(11)s(14)s(17)-s6s(19)s(21)s(24)s(27)s(30)s(31)
--:**- *singular* Top L1 (Singular Interaction:run)-----
Mark set
```

# Skeleton

The image shows a web browser window with the title "Skeleton: Implementation of Double Description Method - Iceweasel". The address bar shows the URL "http://www.uic.unn.ru/~zny/skeleton/". The main content of the page is titled "Skeleton: Implementation of Double Description Method".

**Skeleton: Implementation of Double Description Method**

Skeleton is a new fast implementation of Double polyhedral cone. Float, integer and arbitrary precision [Arageli](#) library for exact computation. The latest version is 02.01.02.

- Skeleton 02.01.01 - [sources and manual](#)
- Skeleton 02.01.01 - [pre-compiled Windows executables](#)
- [Manual](#)

[1] T.S. Motzkin, H. Raiffa, G.L. Thompson, and F. T. Tucker, editors, Contributions to the Theory of Convex Polyhedra, pages 51-73. Princeton University Press, Princeton, NJ, 1963.

**Skeleton online**

You can try [skeleton online](#). Thanks to Sergey V. Dolzhenko.

**MATLAB wrapper for Skeleton**

My MATLAB [wrapper](#). Dec. 22 2009. New! Only for Windows.

**Related Software and Links**

- Komei Fukuda's [CDD](#): another implementation of DDM.
- David Avis' [lrs](#): the reverse search algorithm.

**PDF Viewer: skeletonman.dvi (manual.pdf)**

File Edit View Go Help

Previous Next 1 of 30 Fit Page Width

**SKELETON 02.01.02 Manual**

Nikolai Yu. Zolotykh  
with participation of Aleksey Bader, Sergey Lobanov, Sergey Lyalin  
N.I. Lobachevsky State University of Nizhni Novgorod, Russia  
July 15, 2010

**Abstract**

This paper describes SKELETON: implementation of several new variations of well-known Double Description Method (DDM) for solving the vertex and facet enumeration problems for convex polyhedra. New enhancements makes SKELETON quite competitive in comparison with other implementations of DDM. The source code of SKELETON 02.01.02 is available at <http://www.uic.unn.ru/~zny/skeleton>.

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2	Introduction	3
3	Theoretical Preliminaries	4
3.1	Polyhedral Cones	4
3.2	Polyhedra	6
3.3	The main idea of the algorithm	8
4	How to Build	9

# Sollya

The image shows a screenshot of a web browser window titled "Sollya software tool - Iceweasel". The address bar shows the URL "http://sollya.gforge.inria.fr/". The page content includes the title "Sollya", a description of the tool environment, a list of features, and download information. A small image of blue flowers is visible on the right side of the page. Overlaid on the bottom right is a PDF viewer window titled "sollya-2.0.pdf", showing the "Users' manual for the Sollya tool" with authors' names and email addresses highlighted in red boxes.

**Sollya**

Sollya is a tool environment for safe floating-point code development. It is particularly targeted to the automatized implementation of mathematical floating-point libraries (Libm). Amongst other features, it offers a [certified infinity \(supremum\) norm](#) and a fast [Remez algorithm](#).

**Sollya** is developed by [Arénaire](#) and written by [Christoph Lauter](#), [Sylvain Chevillard](#), [M. Joldes](#) and [N. Jourdan](#).

**Sollya provides you:**

- a [certified infinity \(supremum\) norm](#) for computation
- an automatized implementer for approximation
- a fast implementation of [Remez algorithm](#) for code generation
- a full-featured programming language adapted to floating-point arithmetic
- a faithful-rounding, multi-precision evaluator of floating-point expressions
- a highly accurate and fast floating-point infinity (supremum) norm
- support for floating-point rounding operators and modes
- a special [floating-point minimax](#) procedure,
- basic [MathML](#) input and output support,
- interfaces for extending Sollya with your own code

**Download Sollya:**

- [Sollya 2.0](#) has been released and can be downloaded
- A weekly build (last compiled on 08/08/2010) of Sollya is available
- The latest development version is available through the SVN

**Users' manual for the Sollya tool**  
Release 2.0

Sylvain Chevillard [sylvain.chevillard@ens-lyon.org](mailto:sylvain.chevillard@ens-lyon.org)  
Christoph Lauter [christoph.lauter@ens-lyon.org](mailto:christoph.lauter@ens-lyon.org)  
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April 20, 2010

**License**  
The Sollya tool is Copyright © 2006-2010 by

# SnapPea

The screenshot shows a web browser window titled "SnapPea - Iceweasel" with the address bar containing "http://www.geometrygames.org/SnapPea/". The page content includes a navigation menu (File, Edit, View, History, Bookmarks, Tools, Help), a search bar with "Google", and a list of "Meistbesuchte Seit...". The main content area has a blue background and features the "SnapPea" logo, a section titled "Cross-platform SnapPy", and several paragraphs of text. A dialog box titled "SnapPea 3.0 (experimental versic)" is overlaid on the right side of the page. The dialog box has two sections: "manifold from file" with a text input field containing "<file name>" and an "Open" button; and "manifold from cusped census" with a list of radio button options: "<= 5 tetrahedra", "6 tetrahedra orientable", "6 tetrahedra nonorientable", "7 tetrahedra orientable", and "7 tetrahedra nonorientable". Below the list is a text input field for "manifold # 0" and another "Open" button. At the bottom of the dialog box is a "Quit SnapPea" button. The browser's status bar at the bottom shows "Done" and a taskbar with several open applications, including "knxm-icm2010...", "SnapPea - Icewe...", "sollya-2.0.pdf", and "SnapPea 3.0 (exp...", along with a system clock showing "11:22".

File Edit View History Bookmarks Tools Help

http://www.geometrygames.org/SnapPea/ Google

Meistbesuchte Seit... KNOPPIX

## SnapPea

### Cross-platform SnapPy

Marc Culler and Nathan Dunfield's [SnapPy](#) is

a user interface to the SnapPea kernel which runs on Mac OS X, Linux, and Windows. SnapPy domains and cusp neighborhoods with a powerful command-line interface based on the Python p

SnapPy is already the preferred user interface for SnapPea. In the not-too-distant future its capabilities Mac OS X interface (see below), at which point the older Mac OS X interface will be retired.

A revised [SnapPea kernel](#) is also available.

### Mac OS X SnapPea

The older [SnapPea for Mac OS X](#), while still incomplete, supports enough features that you may find include: cusped census, knot and link entry, drilling and filling, symmetry group, fundamental group, D [SnapPea](#) also remains available.

### SnapPea for Windows

A. C. Manoharan has updated his [SnapPea PC](#) for Windows 7. It continues to run well on Windows

Questions? Contact [Jeff Weeks](#).

[Return to [Geometry Games home](#).]

manifold from file  
<file name>  
Open

manifold from cusped census

- <= 5 tetrahedra
- 6 tetrahedra orientable
- 6 tetrahedra nonorientable
- 7 tetrahedra orientable
- 7 tetrahedra nonorientable

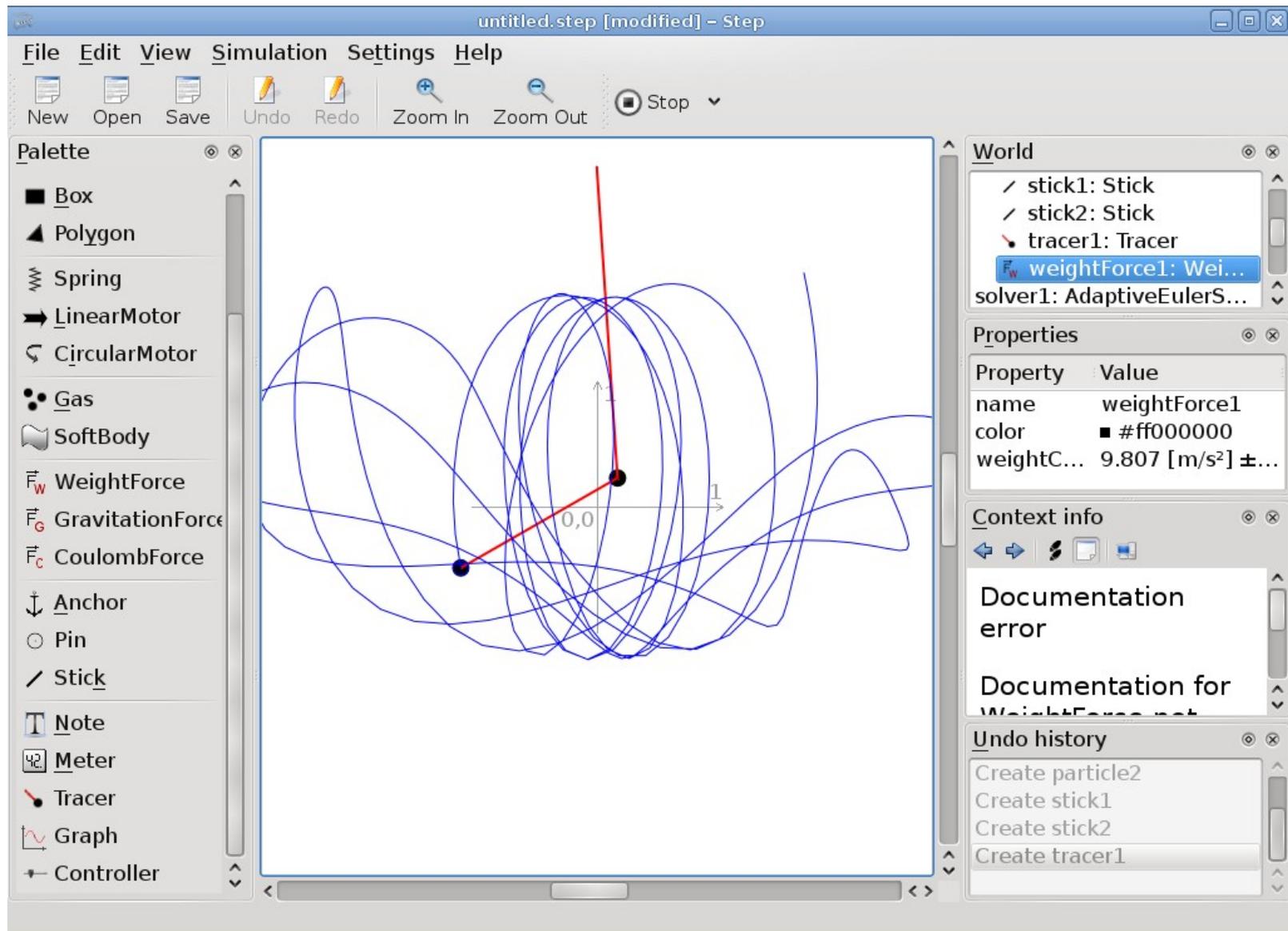
manifold # 0  
Open

Quit SnapPea

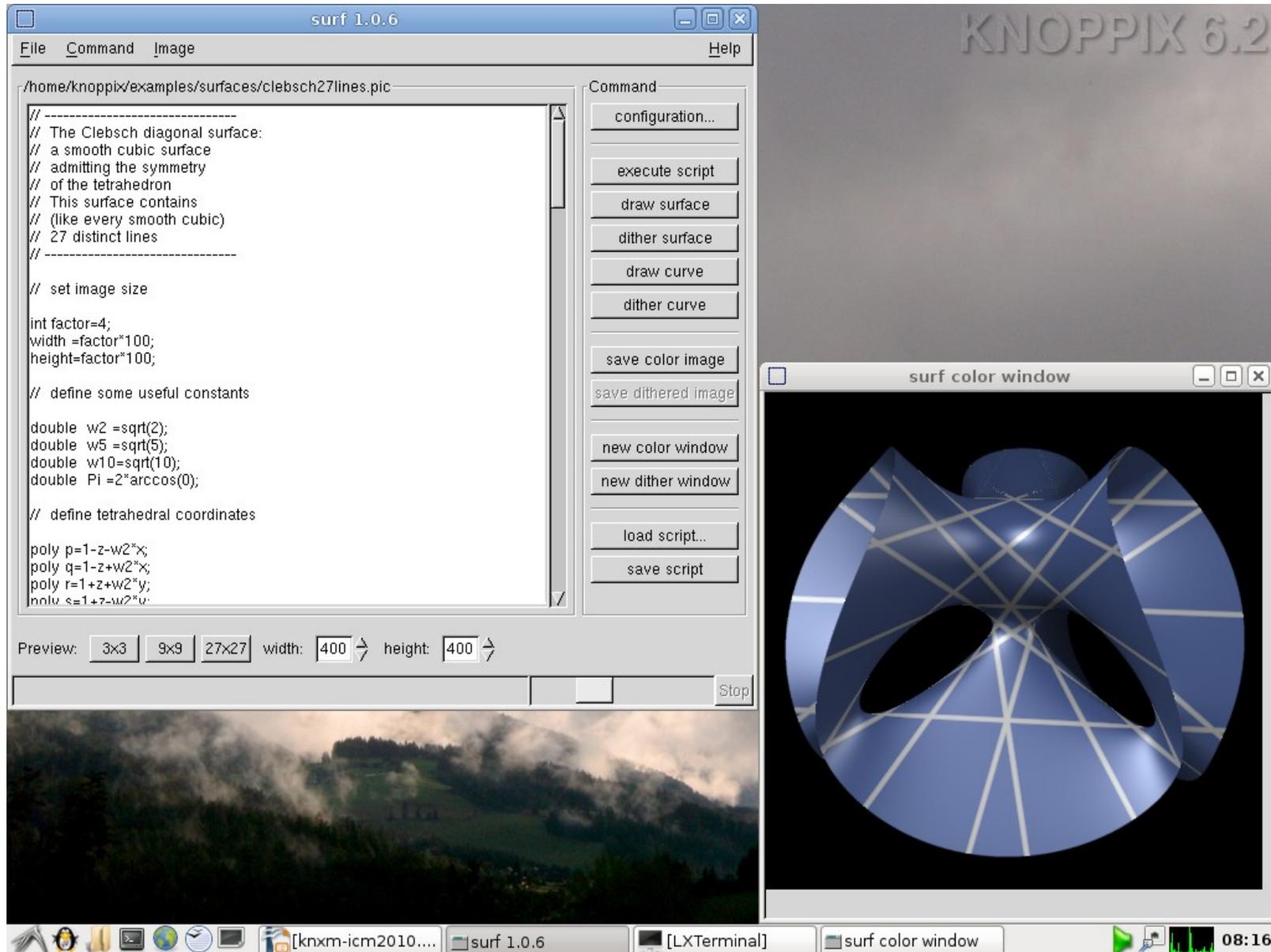
Done

knxm-icm2010... SnapPea - Icewe... sollya-2.0.pdf SnapPea 3.0 (exp... 11:22

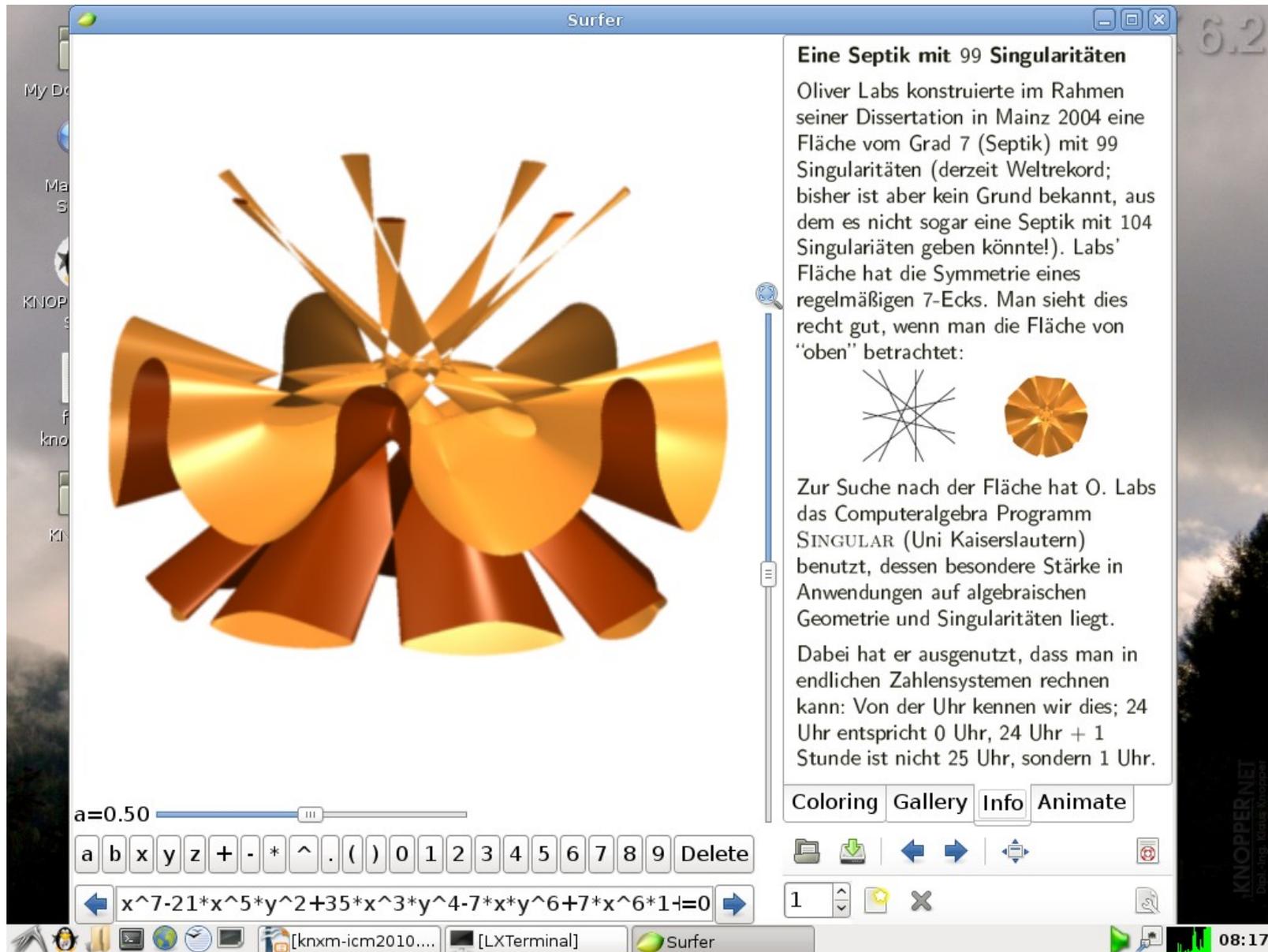
# Step



# Surf



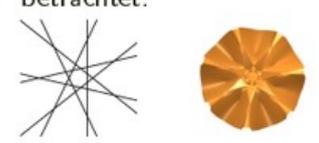
# Surfer



The screenshot shows the Surfer software window. The main area displays a 3D rendering of a complex, golden, multi-lobed surface. Below the rendering is a slider for a parameter 'a' set to 0.50. At the bottom, there is a keyboard interface with letters 'a', 'b', 'x', 'y', 'z', '+', '-', '\*', '^', '.', '(', ')', and digits '0' through '9', along with a 'Delete' key. Below the keyboard is a text input field containing the equation  $x^7 - 21x^5y^2 + 35x^3y^4 - 7x^2y^6 + 7x^6y^2 = 0$ . To the right of the 3D view is a text panel with the following content:

**Eine Septik mit 99 Singularitäten**

Oliver Labs konstruierte im Rahmen seiner Dissertation in Mainz 2004 eine Fläche vom Grad 7 (Septik) mit 99 Singularitäten (derzeit Weltrekord; bisher ist aber kein Grund bekannt, aus dem es nicht sogar eine Septik mit 104 Singularitäten geben könnte!). Labs' Fläche hat die Symmetrie eines regelmäßigen 7-Ecks. Man sieht dies recht gut, wenn man die Fläche von "oben" betrachtet:



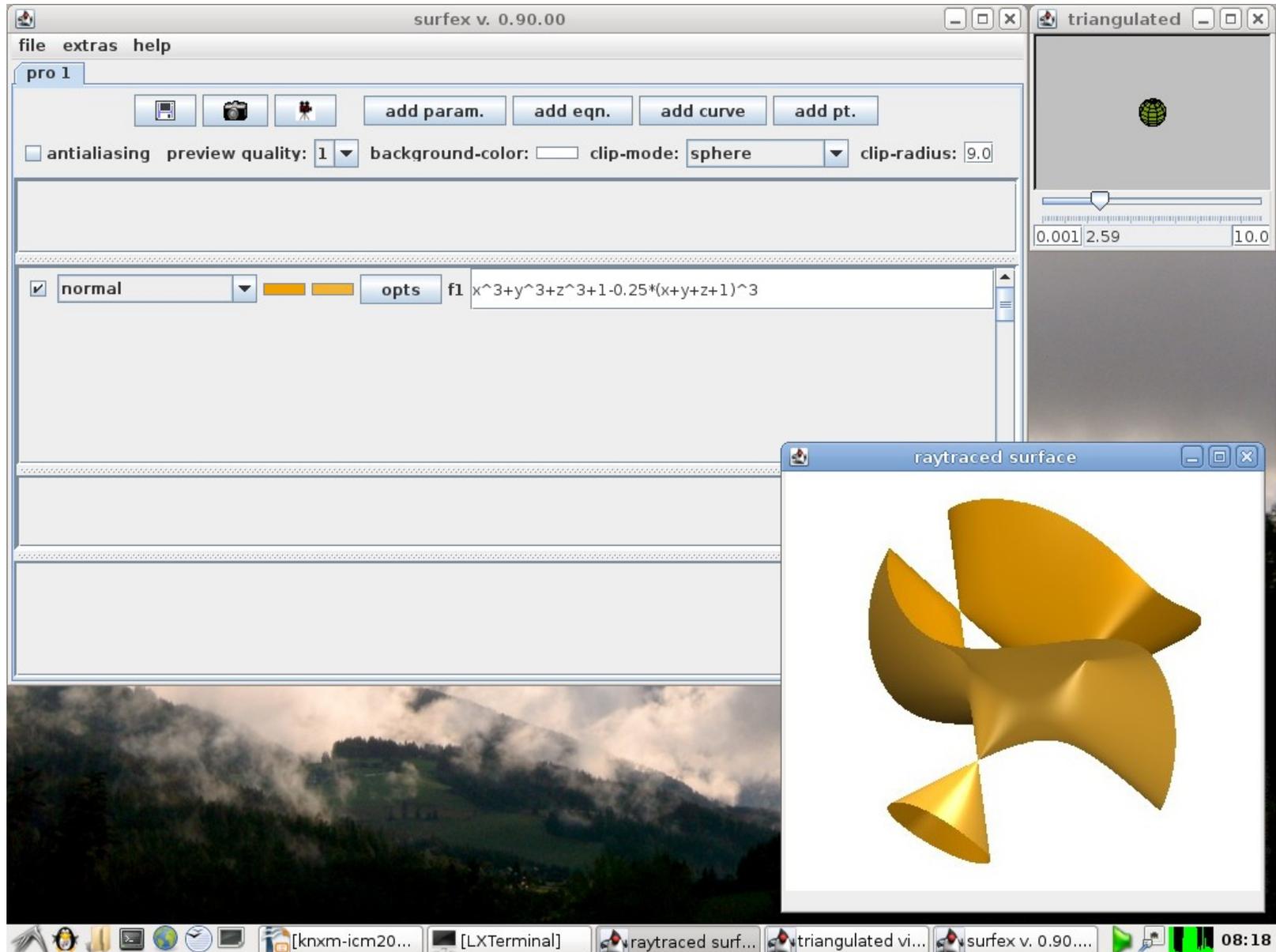
Zur Suche nach der Fläche hat O. Labs das Computeralgebra Programm SINGULAR (Uni Kaiserslautern) benutzt, dessen besondere Stärke in Anwendungen auf algebraischen Geometrie und Singularitäten liegt. Dabei hat er ausgenutzt, dass man in endlichen Zahlensystemen rechnen kann: Von der Uhr kennen wir dies; 24 Uhr entspricht 0 Uhr, 24 Uhr + 1 Stunde ist nicht 25 Uhr, sondern 1 Uhr.

Coloring Gallery Info Animate

Navigation icons: back, forward, search, zoom, and a close button.

Bottom status bar: [knxm-icm2010....] [LXTerminal] Surfer 08:17

# Surfex



# Surface Evolver

The screenshot shows a web browser window displaying the Surface Evolver website. The browser's address bar shows the URL `http://www.susqu.edu/facstaff/b/brakke/evolver/evolver.html`. The website content includes a title "The Surface Evolver Version 2.30 January 1, 2008" and a description of the software. A list of examples is visible, including "General examples", "Ball Grid Array ex", "Gull Wing Lead ex", "Tombstone exam", and "Six-part Surface EV". A "Download Surface" button is also present. In the foreground, a window titled "Camera (Euclidean view)" displays a 3D rendering of a complex, multi-faceted surface. The system tray at the bottom shows several open applications, including "knxm-icm...", "Surface Ev...", "LXTerminal", "Camera (E...", "[Geomvie...", and "[Tools]". The system clock indicates the time is 11:33.

Surface Evolver - Iceweasel

File Edit View History Bookmarks Tools Help

`http://www.susqu.edu/facstaff/b/brakke/evolver/evolver.html` Google

Meistbesuchte Seit... KNOPPIX

## The Surface Evolver

Version 2.30  
January 1, 2008

(Actually the slightly updated version 2.30c)

My Surface Evolver is an interactive program for the modelling of liquid surfaces shape available free of charge.

- Download the Surface Evolver for various systems.
- Browse Surface Evolver [documentation](#).
- Surface Evolver examples:
  - General examples
  - Ball Grid Array ex
  - Gull Wing Lead ex
  - Tombstone exam
  - Six-part Surface EV
- Viewer program [evmovi](#) and forth in the evolution,
- Some other people's page
  - N.I.S.T. Solder Int
  - Morwen Thistleth
  - Jim Hoffman's LE

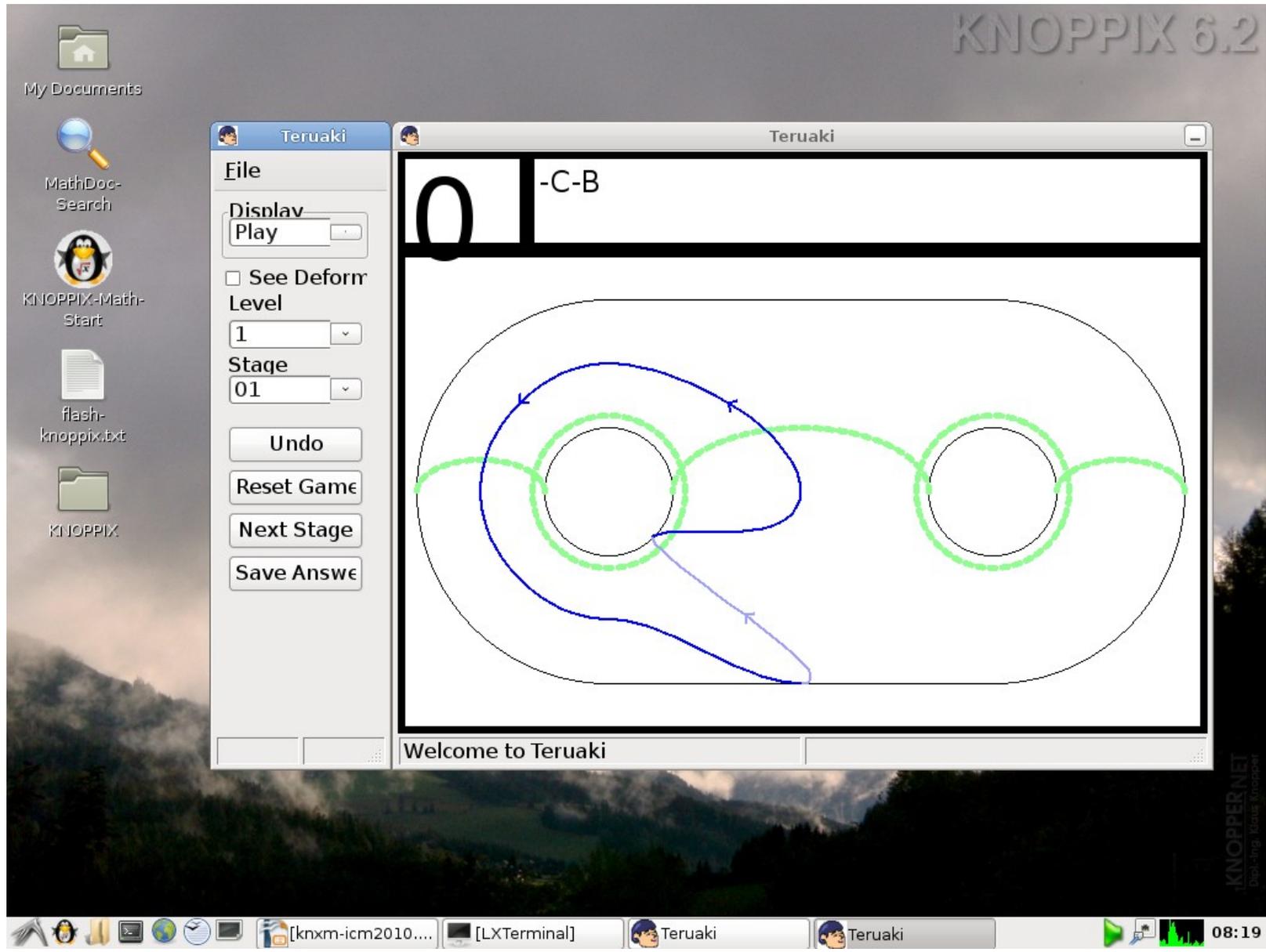
Download Surface  
Done

Camera (Euclidean view)

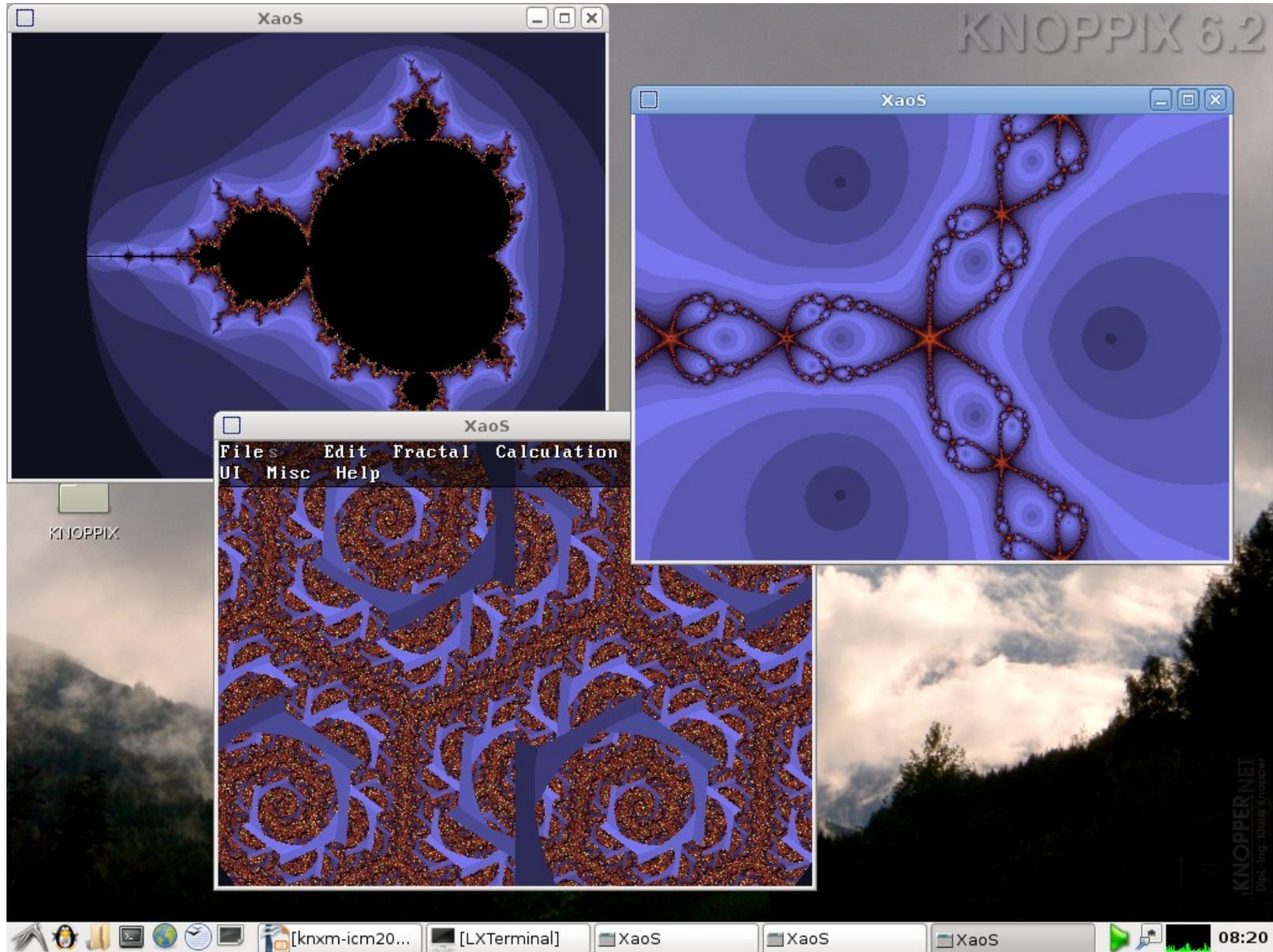
	area:		ene
23.	6.43548305138754	ene	
22.	6.43542872963955	ene	
21.	6.43537493093555	ene	
20.	6.43532166435057	ene	
19.	6.43526893434892	ene	
18.	6.43521674885333	ene	
17.	6.43516511217141	ene	
16.	6.43511403109489	ene	
15.	6.43506350973893	ene	
14.	6.43501355378894	ene	
13.	6.43496416713530	ene	

knxm-icm... Surface Ev... LXTerminal Camera (E... [Geomvie... [Tools] 11:33

# Teruaki



# XaoS



# Yorick

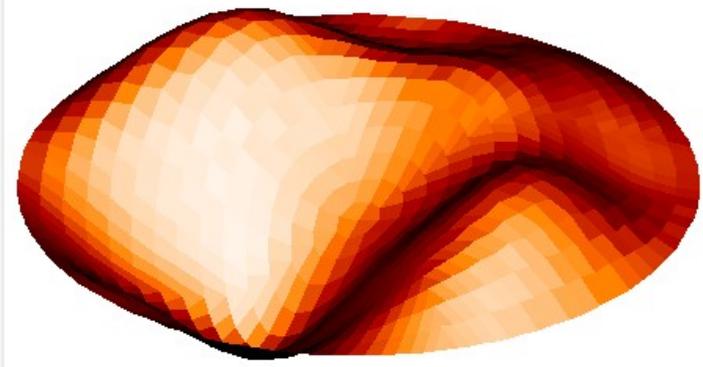
KNOPPIX 6.2

LXTerminal

```
File Edit Tabs Help
Copyright (c) 2005. The Regents of the University of California.
All rights reserved. Yorick 2.1.05 ready. For help type 'help'
> include, "demo2.i"
> demo2
200.000000 frames of filled mesh drumhead completed in 5.869904 sec
Rate for filled mesh is 1394.466756 (sec)
200.000000 frames of wireframe surf
Rate for filled mesh is 1303.585512 (sec)
```

Yorick 0

System : 1 ( -0.5788, -0.7599)



KNOPPIX NET  
Dipl.-Ing. Klaus Knopper

[knxm-icm2010....] [LXTerminal] LXTerminal Yorick 0 08:21

# cca

Visualize Buchberger algorithm

xdvik: manual\_BuchbergerGUI (1 page)

Edit Strategy Criterion Mode View Display

timer :  
[0,0]

count :  
1

next

start

stop

(0,1)

(0,2) M (1,2)

(0,3) M (1,3) M (2,3) R

(0,4) M (1,4) M (2,4) (3,4) D

2: +c1\*c0+c3\*c0+c2\*c1+c3\*c2  
3: +c0+c1+c2+c3  
4: -c1^2-2\*c3\*c1-c3^2

## 1 Quick Introduction

- Please select "Edit" → "Information" in the menubar to set data of an ideal.
  - "server" is the name of the machine which executes anonymous Risa/Asir server  
Ex localhost
  - "generators" are generators of an ideal  
Ex  $[x^2+y^2+z^2-1, x*y*z-1]$
  - "vlist" is a list of variables  
Ex  $[x,y,z]$
  - "order" is a monomial order  
Ex integer
    - 0: total degree reverse lex order
    - 1: total degree lex order
    - 2: lex orderEx matrix  $[[1,0,0],[0,1,0],[0,0,1]]$ . When "vlist" is  $[x,y,z]$ , this matrix order means the lex order such as  $x > y > z$ .

These input in "generators", "vlist" and "order" must follow Risa/Asir's syntax. For example, the input  $[x+1, y^2+1]$  means the list of polynomials  $x+1$  and  $y^2+1$ .

- When you click a ball (ball stands for a S-pair), the system starts to divide the S-pair standing for the ball by the current intermediate Groebner basis. Polynomials in the bottom window are intermediate Groebner basis. The meaning of colors of balls is as follows:
  - red: remaining S-pair
  - sky blue: S-pair eliminated by division
  - white: S-pair eliminated by Buchberger's criterion (criterion 1)
  - gray: S-pair eliminated by Gebauer, Möller criterion (criterion 2)
- When you click the next button, the system automatically selects a S-pair by the current strategy and divides the S-pair. You can select the strategy from "Strategy" in the menubar. When you click the start button, the system switches to the automatic mode and automatically divides S-pairs till you click the stop button.
- When you (or the system) eliminate all red balls, the computation stops, and you get Groebner basis in the bottom window.

This is xdvik 22.84.10

[knxm-icm20... [LXTerminal] [ox] Visualize Buc... xdvik: manua... 08:43

# math-polyglot

