Funky

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Contents

Chapter 1

Funky

1.1 Funky 5.2 - Manual

Welcome to Funky 5.2

****

General:

1.2 If you like this program...

If you like this little program...
****
you can fill out the registration-form and (e-)mail it to me. In connection with DM 20,- cash or 20 US-$ cash (inside Germany: DM 10,-) I will send you a version without the shareware requesters on a 3.5" disk. If you like, I can send it uuencoded via E-Mail. You only need to pay DM 10,- or US-$ 10 if you choose this method!
You may transfer the money to my german bank account (see below; don't forget your name!).
If you want to use another payment method, please contact me. I do NOT take any credit cards!!
Please give me some days for the delivery!
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1.3 English version

Notes about the english version
****
First of all, I must say, that I have (yet?) "only" translated the strings in Funky, not the keyboard shortcuts. That is the reason, why some of the shortcuts are a little bit funny. Sorry about that, but currently, I do not have the time to fix that.
Second, I must admit, that english is not my mother tongue. So, I am sorry about spelling mistakes or any weired translation in the program. If you think, another translation (especially in some mathematical terms) might be better, feel free to contact me! I will collect all spelling-"bugs" and include them in a corrected version. This way, you will get a better english version in the future!

Third, I must admit, that the english guide is not the same as the german one. If somebody of you is programming him-/herself, you know about the great motivation to writing manuals... If anybody is keen on writing a better manual (or extend this one), just mail it to me. I will look through it, and if it is good, release it in the future (don't expect any money for that :-)! If I would say, that you get a free update or registred version for this, everybody would mail me a Funky.guide!). Please: do NOT release it yourself, or we will have hundreds of different manuals flying around, and everyone will say something different. I know how Funky works! So, you might be documenting some "undocumented side effects" that will disappear in the future!

1.4 Basic Function

Functions
****
Funky supports the following functions:
sin, cos, tan, cot, asin, acos, atan, acot, sinh, cosh, tanh, coth,
asinh, acosh, atanh, acoth, ln, log, sqrt, exp.
P is the equivalent for Pi (3.14159....)
E is needed for the scientific notation of numbers (1e-5 = 0.00001).

1.5 Function names

Enter a function name
****
You may give a function a name of a maximum amount of 79 charakters. In the selection-lists, this name will be displayed instead of the function itself.
You may change existing names by double-clicking the function in the function editor.

1.6 Function editor

The function editor
****
In this editor you can enter function strings. There are three posibilities to do this:
1. Input via mouse and the corresponding gadgets

2. Input via keyboard and the keyboard shortcuts
3. Input via the string gadget (press TAB or select it with the mouse)
In the function editor, the shortcuts are case sensitive!
To insert constants, select the ??? -gadget.
By pressing the I -gadget, you can enter a name for the function.
Functions can be loaded/saved. Standard workbench requesters are used to
select a filename.
When printing the functions, the standard workbench printer driver is
used.
To delete (clear) functions, you have the selection between deleting the
functions one by one or all at once. If you select "Single", a warning
"Deleting!!" appears on the top left corner of the window. To leave the
delete-mode again, select "Clear" a second time.

1.7 Constant editor

The constants editor
****
The constants editor looks more or less like the function editor .
You can select an existing constant by using the cursor keys.
If you want to use the editor as a calculator, just type in a function
string (without the vars X, Y and Z, of course!). After pressing <RETURN>
the first time, Funky will calculate and print out the value. You may
the modify it and repeat this procedure, or press <RETURN> a second time
to return to the caller module again.
If you do not enter a comment for a constant, the editor will not insert
them in the list but only return them to the caller module.
Note: You can always reach the constant editor with the "?"-gadgets!

1.8 Derivations

Derivation
****
A derivation is the gradient in a point of a curve.
Funky gives you the ability, to create a symbolic derivation of a
function. You may derive to the vars X, Y or Z. The result will be
printed on the screen and is inserted in the function list.
NOTE: You may check the derivation by using the function plotter and
plotting both, the numerical and the symbolic derivation. They
must be the same (they may only differ in some very extreme
cases like f(x)=sin(1/x))!
(Otherwise, you found a serious bug and it would be very kind
of you, to report it...)

1.9 Function plotter (2 D)

The function plotter (2 D)

****

The function plotter enables you to get a graphical output of a
function string depending on X.
"X 1" and "X 2" are the borders of the Intervall to plot.
"Y 1" and "Y 2" are the borders of the Y-axis to be displayed.
"MarkX" and "MarkY" determine the distance in which marks are to
be placed on X or Y-axis.
(some of these fields may be inactive, depending on the state
of the scaling gadget)
Angle determines, which way angles are mesured.
Scaling determines how the grid is produced.
Color determines which color will be used for the drawing.
"Plot" has the following functions:
- draw function itself
- draw 1st/2nd/3rd derivation
- draw inverse function
- draw integral function
"Helplines" turns the helplines on/off.
"New worksheet" determines, if the gfx-screen is to be cleared before
plotting or if the old one is used. You can draw as
many functions as you like that way.
"Close screen" closes an opend gfx-screen again. This saves chip-mem.
In the function list you choose the function to plot.
"Plot" activates the calculation
"Graphicmode" shows the selected gfx-mode.
New enables you to change this.
"See" only switches to the gfx-screen without any calculations.
"Editor" leads to the function editor .
"Preferences" enables you to change the prefs.
"Return" returns to the calling module or the main menu.

1.10 Types of scaling

Types of scaling

****

The function plotter has 4 different kinds of creating a grid

1. "Manual" : X- and Y-axis selected by user
2. "Based on X": X-axis selected by user as well as Y 1. Y 2
is calculated, so that the aspect ratio is
correct.
3. "Based on Y": Y-axis selected by user as well as X 1. X 2
is calculated, so that the aspect ration is
correct.
4. "Autom." : User selects X-intervall. Funky calculates
Y-intervall and MarkY automatic, so that
the complete function is visible.

1.11 Insert text

Insert Text on gfx-screen
****
Font, style and color are selected by a standard workbench requester.
After entering the text, press <RETURN> or the OK-gadget. The text is
"hanging" on your mouse-pointer. Press the left mouse button to place
it.
To abort, press <ESC> or the right mouse button.

1.12 Graphicmode (Workbench 2.1 or higher required!

Graphicmode for the plotter screens
****
You may select any graphic mode you can select with the standard
workbench screen mode requester. Workbench 2.1 is required!
If you select less than 16 colors, no more colors can be displayed
(logic!). Funky just repeats the colors then. This way, you can
mix up the color names!
WARNING: Some gfx-modes need special hardware! Consider this at
your selection.
If memory usage exceeds 800000 Bytes, Funky will ask
you, if you are sure (are you?).
WARNING: Unter OS 2.1 seems to be a bug when chip-mem is low and
OpenScreenTags() fails. After this happens, the screen
mode requester cannot be opened again.
I check chip-mem myself before opening a screen. If
this makes any problems with gfx-cards, contact me.
I do not have a gfx-card and cannot check this!

1.13 Graphic display

The graphic display

****

On the gfx-screen you have the following functions available:

- change/load/save color-prefs

- make a hardcopy of the screen

- save the screen in IFF-Format

- insert text

The plotting of a function may be interrupted by pressing the <ESC>-key. (be patient when doing this)

If you have selected an oversized screen, it will scroll when your mouse touches the borders.

(Just try a NTSC:HighRes Interlace with 1024 x 768 !!)

1.14 Hardcopy of gfx-screen

Printing a screen

****

Before printing, Funky asks for the dimensions (in cm or inch).

The workbench printer driver will be used for printing.

After printing, Funky asks if it shall send a form feed.

If you select 0 for printing width AND height, nothing will be done. If you select 0 for one of the values, the other one will be ajusted to get a correct aspect ratio.

1.15 3D function plotter

The 3D function plotter

****

With this module you get the ability to display functions with two independants (X and Y).

x 1 etc. determine the dimensions of x, y and z axis to be displayed.

Rx, Ry and Rz determine the rotation angles around each axis (in degrees).

In "Vgr" you can enter an enlargement factor

With Distortions you can scale each axis.

Funky desides the viewer point itself. If you put all rotation

angles to 0 you will look along the Y-axis, x-axis going to
the right and z-axis going up.
The "Grid" can be selected between "very coarse" and "extrem
fine".
With "Color" and "Col 2" you can select the different colors.
The first is for positive function z-values, the second one
for negative ones.
Press "Plot" to start the calculation.
On the gfx-screen you have further functions.
By selecting "Close screens" you can save chip mem after you
are finished with your work in the 3D plotter.

1.16 Distortion of axis

Distorion of axis in 3D plotter
****
You may select different scaling factors for each axis. This
factor is already included when the 3D object is generated,
so exported data (to reflections) will already include the
scalings.
A factor of 1 means no scaling, factors < 1 will make the
object smaller, factors > 1 will enlarge them.

1.17 Gfx-Screen - 3D plotter

The gfx-screen of the 3D plotter
****
When plotting a new function, Funky will display "Please wait..."
in the top left corner of the screen. It takes a while, until all
data is rendered.
When the function is displayed, you can turn on/off the coordin-
ate-axis with the <DEL>-key.
In the pull-down menues you have the same functions as in the
2D plotter (print, save IFF, color prefs)
WARNING: If you add any text, it will be deleted when you modify
the display!
By choosing Save reflections... you can transfer the data to the
Raytracer Reflections.
With the option View/Change fast you can modify the display with

the mouse. You can also reach this function by simply pressing
the left mouse-button.
You can also rotate the function continously by using the following
keys.
0 all rotations STOP
1 rotate around xb-axis, left
2 rotate around xb-axis, stop
3 rotate around xb-axis, right
4 rotate around yb-axis, left
5 rotate around yb-axis, stop
6 rotate around yb-axis, right
7 rotate around z-axis, left
8 rotate around z-axis, stop
9 rotate around z-axis, right
+ enlarge (1 step)
- scale down (1 step)
* enlarge (10 steps)
/ scale down (10 steps)
DEL turn coordinate axis on/off
F 1 scale down gfx-display
F 2 enlarge gfx-display
By pressing a key several times, you can speed up rotation.
Press <RETURN>, <ESC> or select "Return" in the pull down menu
to return to the plot editor.
Remark about the coordinate axis:

The xb-axis a a fixed ax, lying horizontal through the middle of
the screen.
The yb-axis is also fixed, but is going into the screen.
The z-axis is fixed to the function itself and is equal to the
displayed z-axis.
Picture:
zb
\ |
\ |
\ |
z \ |
(examp.) \ |
\ |
\ |
\ |
\|
o---------- xb

1.18 Save 3D-data in reflections format

Save Reflections...

****

Funky is using the routines supplied with Reflections 2.5.

(util/writeszene.c)

When you load a file into Reflections, three messages will

be displayed; just ignore them.

The following list shows the amount of memory for the different

grids:

grid type file length (bytes) points objects

---

very coarse 6.656 225 392

coarse 12.288 400 722

middle 19.456 625 1.152

fine 27.648 900 1.682

very fine 37.888 1.125 2.312

extreme fine 49.664 1.600 3.042

1.19 Change view fast

Fast changing of 3D perspective

****

When changing the 3D perspective in the fast way, only the

coordinate-axis will be displayed. You can then change the

perspective by pressing the left mouse button and moving

the mouse in real-time.

If you also press the shift-button, you can enlarge or scale

down the display.

Press <ESC> or the right mouse button when you are finished.

1.20 Curve discussion

Curve discussion (function analysis)

****

This module gives you the ability, to discuss a function.

You may do the following operations:

Find zeros Find extreme values

Find turning points Find intersections

Find gaps/asymptotes Calculate a tangent
Calculate function value(s) Calculate function normale
Calculate curvature circle Check for symmetry
Check for monotony
By selecting a color with "zeichnen", the results will be
drawn into the 2D plotter (if gfx-screen is open).
You can also load/save/print/clear the results.
Select "Return" to return to the main menu.

1.21 The used colors

Colors
******
The names of the colors need not match with the real colors.
You may edit both on the gfx-screens.
After Funky is started, it will look for a file called "Funky.PAL"
in its directory. If this file is found, it will be loaded an the
data will be used. Otherwise, Funky will use internal data.

1.22 Intervall

The request window
****
A) Enter an intervall
****
All curve discussions are performed in an intervall specified by
the user.
ONLY in the intervall operations will be performed!
When doing integral calculations, watch out for vertical asymptotes!
Funky may calculate forever under some conditions. If this happens
(or seems to happen), try to press <ESC> and wait a minute. Funky
usually aborts its calculation then.
B) Other usages
****
The request window is also used under some other conditions to enter
values (for example: print width, print height, etc).
When entering matrix dimensions, you do this like:
number of lines x number of columns

1.23 Integral calculation

Integral calculation

****

You may calculate the following definite integrals:

Arc length Volume at rotation (rotation bodies)

Area under curve (curved) surface at rotation

(surface of body of rotation in-/ex-

Area between 2 curves cluding circles)

Watch out, that there are no vertical asymptotes in the intervall!

By selecting a color, the calculated areas will be marked in the

2D plotter (if gfx-screen is opened).

1.24 Integrals of 2 or 3 vars

Integrals of 2 or 3 variables

****

The general form of the calculated integral is

_x2 _y2 _z2

| | |

V = | | | f(x,y,z) dz dy dx

_| _| _|

x1 y1 z1

f(x,y,z) may depend on x, y and z. z1/z2 may depend on x and y.

y1/y2 may only depend on x and x1/x2 must be constants.

With "F3" to "F7" you can select existing functions form the

function editor.

With "? 1" to "? 7" you may insert constants.

"Degree" selectes, if you have 2 or 3 integration steps.

By selecting "Type", you can use several predefined functions

for f(x,y,z). An internal "symbolic" integration will be performed,

to speed up calculation a bit.

These are the predefined functions:

Volume f(x,y,z) = 1 Volume calculation (density = const)

X f(x,y,z) = X for center of gravity Xs

Y f(x,y,z) = Y " " Ys

Z f(x,y,z) = Z " " Zs

Y^2+Z^2 f(x,y,z) = Y^2+Z^2 Moment of inertia around X-axis

X^2+Z^2 f(x,y,z) = X^2+Z^2 Moment of inertia around Y-axis

X^2+Y^2 f(x,y,z) = X^2+Y^2 Moment of inertia around Z-axis

Note: To calculate the center of gravity, you have to devide the result with the calculated volume!

"Calculate" starts the calculation. It may take several minutes!

(you may abort by pressing <ESC>)

1.25 The function list

Function list

****

You can load/save/print/select functions from this list.

Selection is also possible by a double-click.

1.26 Matrix calculations

Matrix calculator

****

You may perform operations for up to 2 matrix' in the matrix calculator. They are stored in two areas called A and B.

Available operations are

Enter a matrix

c * A multiply matrix A with a constant

A ^ n raise matrix A to the power of n

Transp. A calculate transponated matrix A

Inv A calculate inverse matrix A

Det A calculate determinante matrix A

Eq.-system A solve equation-system

Charct. Eq. A calculate characteristic equation of matrix A (needed to calculate the so-called eigen values)

|Vec A| calculate of amout of column vectors of matrix A

A * B matrix multiplication of A and B

A + B/A - B Add/subtract matrix'

Ang Vec A,Vec B calculate angle between column vectors of matrix A and B

1.27 Name of a matrix

Enter name for matrix

****

You can enter a name for the matrix here (or change an existing name).

1.28 Enter a matrix

Enter a matrix

****

First you may select an existing matrix from the ist ("Edit") or create a new one ("New").

After you entered the dimensions you reach the matrix-editor. (If you modify an existing matrix, you may overtake the data when reducing/enlarging the size)

You may input data in lines or colums, depending on the state of the "direction" switch.

Note: the input mode is on, until you have reached the bottom right corner.

Results will also be displayed by using the editor. Only the input gadget will be inactive.

1.29 Characteristic equation

Characteristic equation of a (quadratic) matrix

****

The characteristic equation is needed to calculate the so-called eigen-values.

It will be displayed like:

-1

2

3

4

which means: -1*x^3 + 2*x^2 + 3*x^1 + 4*x^0

= -x^3 + 2*x^2 + 3*x + 4

This equation will also be added to the function list.

If memory is low, display may look like

4 3 2 -1

1.30 Analytic geometry

Analytic geometry
****
This module offers functions to perform several calculations in
a threedimensional room.
You may enter elements like points/vectors, lines, planes and
spheres.
Functions are available for
Points/Vectors
Lines
Planes
Spheres
The order in which they have to be in the memory areas A to C
is adequate to the order in the gadgets.
P, Q, Vec are vectors/points
g, h are lines
D, E, F are planes
K are spheres

1.31 Name of a geometry object

Enter a name for a geometry object
****
You can enter a name for a geometry object or change an existing
one.

1.32 Functions for points/vectors

Vector functions
****
To enter a point/vector you need to enter a name (max. 10 chars)
and the X, Y and Z components.
Functions:
2 Pnt -> Vec vector between two points
Dist. 2 Pnt distance between two points
Vec x Vec cross product (vector product)
Vec * Vec dot product (scalar product)
|Vec| amount of vector
Vec + Vec add two vectors
Vec - Vec subtract two vectors
x * Vec subtract vector with scalar x
Ang(Vec,Vec) angle between two vectors

1.33 Functions for lines

Functions for lines

****

When entering a line, you must specify a name and one point

on the line. Vx, Vy and Vz is the direction vector.

-> -> ->

g: x' = x + l * vx

Functions:

2 Pnt -> line Line through 2 points

Dist P,g Distance between point and line

Dist g,h Distance or intersection of lines

Ang(g,h) Angle between 2 lines

1.34 Functions for planes

Functions for planes

****

To enter a plane you need to enter a name, the normal vector

and the "d-term".

E: ax + by + cz = d

Functions:

3 Pnt -> E Plane including three points

P,g -> E Plane including P, vertical to line g

P,g(in) -> E Plane including P and g

P,Vec,Vec Plane including P and 2 Vectors

P,Vec -> E Plane including P, vertical to vector

Dist P,E Distance between point and plane

Intrsct g,E Intersection or distance of line and plane

Intrsct E,F Intersection or distance of two planes

Ang(g,E) Angle between line and plane

Ang(E,F) Angle between two planes

1.35 Functions for spheres

Functions for spheres

****

When entering a sphere, you must specify a name, the middle point

and the spare (!) of the radius (r^2).

-> ->

K: [x - m]^2 = r^2

Functions:

2 Pnt -> sphere sphere with middle point and point on surface

Dist Pnt,K Distance point - sphere

Intrsct g,K Intersection/Distance of line and sphere

Intrsct E,K Intersection/Distance of plane and sphere

Intrsct K,K Intersection/Distance of two spheres

Tang. trgh P Tangential plane in P

Tang. trgh g Tangential planes with intersection line g

1.36 File endings

File endings used by Funky

****

Funky automatically extends filenames with endings (if you do not

add them by yourself).

*.FNK File with functions (ASCII-Datei)

*.ASC File with results (ASCII-Datei)

*.IFF Picture file (IFF-ILBM-Format)

*.FMX File with matrix (internal Format)

*.PAL Colors (internal Format)

*.PREFS Preferences (internal Format)

*.CONST File with constants (internal Format)

*.PKT File with points/vectors (internal Format)

*.GER File with lines (internal Format)

*.EBN File with planes (internal Format)

*.KUG File with spheres (internal Format)

You can specify paths for different data in the prefs.

1.37 Used short cuts

Keyboard short cuts

****

The used key for a gadget is underlined. In the pull down menus, there

is the AMIGA-Symbol in front of it.

In general, OK-gadgets may be selected by pressing <RETURN>, Cancel and

Return is selected by <ESC>.

1.38 The online help

Using the online help

****

By pressing the <HELP>-key you can reach the online help from nearly
all parts of the program.
You must have at least installed the "amigaguide-library" in your
LIBS: directory. If you are using OS 2.x, you should install the
Amigaguide.
In the (Funky-)Preferences, you may edit the call for the online-help.
Funky makes use of a self-made-program called "ShowGuide" which simply
calls a function from the amigaguide.library to display the help.
The correct call should look like:
ShowGuide Funky.guide %s
Funky.guide is the name of this file.
%s is a replacement for the keywords used.

1.39 The keywords of the online help

Keywords used for the online help

****

Keyword Used by

MAIN Main menu
INFO Information
INSERTTEXT Insert text
COLORS Change colors and color names (2D and 3D)
GFXSCREEN Gfx-screen of 2D plotter
PLOTTER Plotter menu (2D)
DERIVATION Symbolic derivation
CONSTANTS Constant editor (calculator)
FUNKEDIT Function editor
FUNCNAME Enter a function name
FUNKLIST Select a function
INTERVALL Request window (intervalls,...)
PREFS Preferences
ANALYSE Curve discussion
INTEGRALS Integral calculations
ANALYSE3D Integrals of 2 or 3 vars

MXMODULE Matrix calculator, main menu
MATRIXIN Enter a matrix
MATRIXNAME Enter name of a matrix
GEO Analytic geometry, main menu
VEKFUNK Enter a point/vector
GERFUNK Enter a line
EBFUNK Enter a plane
KUGFUNK Enter a sphere
GEONAME Enter name of geometry object
PLOT3DGRAF Gfx-screen(s) 3D plotter
PLOT3D 3D plotter, main menu
VERZERR Enter scaling factors

1.40 Program preferences

Preferences
****
You can select 3 different pages with "additional prefs".
Page one includes calculation settings:
Border
Resolution
Precision
Analyse
Angles
Messages
Saving
In the fields A to D you may enter the values for the constants
A to D.
Page two includes settings for printer and screen.
Page three includes the paths for data and the command line for
the online help.
If you save a file called Funky.PREFS in the program directory,
it will be loaded, when the program starts.

1.41 Border

Border value
****
The border value is used for two basic things:
When calculating numerical derivations, they only reach the desired
precision until they are smaller than this amount.
When looking for vertical asymptotes, the function must exceed this
value.

1.42 Resolution

Resolution of calculations
****
Funky is deviding the selected intervall into as many pieces as this
value specifies.
You should select the width of the gfx-screen for this.

1.43 Precision

Precision of calculations
****
Here you can specify the precision of the results, when calculation:
numerical derivations, zeroes, extreme values, turning points,
intersections or integrals.
Depending on this value, Funky also displays its results.
If you set this very small, calculation times may increase!!

1.44 Use Derivations

Derivations
****
Funky can generate symbolic derivations. You may use them in internal
calculations, too, if you set this switch to "Symb. Der.".
Set it to "Num. Der." if any problems occur.

1.45 Messurement of angles

Angles
******
Angles are messured either in degrees or in radians.

1.46 Messages

Displaying warnings
****
You may select "Always" or "If needed". If you select "Always",
Funky will display some additional warnings, when it cannot
generate internal symbolic derivations or when you switch
memory areas in the matrix module.

1.47 Saving of constants

Saving of constants to the constant editor

****

You can select, if Funky shall copy all results to the constant
editor, only single results or never do this.
"Always" Single values as well as lists are stored
(zeros, turning points, ...)
"Single res" Only single values are stored
(function value, area, ...)
"Never" Nothing is stored
Note: Tables of function values are NEVER stored!

1.48 Using this program

Using this program

****

I have designed Funky, because I simply needed a simple program to
calculate my mathematical problems at school and later during my
studies.
Development started about 4 years ago with an AmigaBASIC Version
of a simple function plotter.
After I switched to C, Funky was built up and was first released in
February 1994 as a german version (Funky 4.2) in the AmiNET.
I continued development and released a second version (Funky 4.4) in
April 1994, also in german.
After this, I completly overworked the program and Funky 5.0 took
part in a programming competition (even got place 5 from 60 ;-).
Now, I added some new stuff, like the 3D plotter and the multiple
integrals, and decided to release it again. This time it is shareware .
Considering the amount of work in this "little" piece of software,
I think it has a very fair price (I considered the fact, that most
of the users of this program are students, like me).
WATCH OUT: I do NOT take ANY responsibility for ANY damage caused
by this program package itself or its results!
This software is supplied AS IS!

1.49 Information

Information

****

The information window displays important data about the program.

If you click on one of the graphics, you can see the module versions.

I do not take ANY responsibility on ANY damage, caused by the program

package or its results!! The programs are supplied AS IS. They may NOT

be modified in ANY way without permission of the author!!

The (english) Funky package includes the following files

Funky.info

Funky (dir)

ReadMe very short description

ReadMe.info

Funky the program itself

Funky.info

ShowGuide a program to display the online help

Funky.guide this file

Funky.guide.info

Error.ASC bug report form

Error.ASC.info

Register.ASC registration form

Register.ASC.info

Funktionen (dir)

Demos_3d.FNK demonstration functions

Konstanten (dir)

Physik.CONST physical constants

Mathematik.CONST mathematical constants

Matrizen (dir)

Geometrie (dir)

Ergebnisse (dir)

Farben (dir)

IFF (dir)

Funky3D.IFF demo picture, rendered with Reflections

Prefs (dir)

Funktionen.info

Konstanten.info

Matrizen.info

Geometrie.info

Ergebnisse.info

Farben.info

IFF.info

Prefs.info

Comments, bug reports, good ideas, money, presents,... to:

Peter F. Gath

Gabäckerweg 40/1

D-73630 Remshalden

Germany

Internet: Peter.Gath@studbox.uni-stuttgart.de

See also Shareware .

1.50 Sources of information

Sources of information

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Helpful source-codes

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Randy C. Finch - Numerical calculation of a function string

Source Code of 3DPlot Function Plotter V2.0

AmigaLibDisk440:3DPlot/src/funceval3.c, 1987

Pretty interesting program for conversions of

strings into a postfix notation.

(IPN, Postfix-Notation)

I used it as an orientation to implement my

own function interpreter (which is a little

bit more flexible :-).

Programs of several authors in the AMIGA-Magazine

Used literature:

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1. Programming:

- Commodore Amiga Inc.

AMIGA ROM Kernel Reference Manual Third Edition, Includes and Autodocs

and

AMIGA ROM Kernel Reference Manual Third Edition, Libraries

beide Addison-Wesley, 1991

- Commodore Amiga Inc.

AmigaBASIC - Anhang E: Umschreibung transzendenter Funktionen

Rev. 2.0
- SAS Institute Inc.
SAS/C Development System User's Guide
SAS/C Development System Library Reference
1992
- Dr. Edgar Huckert/Frank Kremser
AMIGA C in Beispielen
Markt & Technik, 1987
- Frank Kremser/Jörg Koch,
AMIGA Programmierhandbuch
Markt & Technik, 1987
- Bleek/Dittrich/Gelfand/Jennrich/Schemmel/Schulz
AMIGA intern
DATA Becker, 1990
- Robert Sedgewick
Algorithmen
Addison-Wesley, 1991
- div. AMIGA-Magazine
2. Mathematics:

- Lambacher Schweizer
Analytische Geometrie - Leistungskurs
Klett, 1989
- Klaus Ulshöfer/H.-D. Hornschuh
Mathematische Formelsammlung für Gymnasien
Verlag Konrad Wittwer, 1988
- Sieber
Mathematische Formeln - Erweiterte Ausgabe E
Klett, 1987
- Bronstein/Semendjajew
Taschenbuch der Mathematik
B.G. Teubner Verlagsgesellschaft 1991
- Axel Plenge
Amiga 3D-Grafik und Animation
Markt & Technik, 1988
- K. Kirchgässner, K. Ritter, P. Werner
Höhere Mathematik Teil 3 -
Differential- und Integralrechnung für Funktionen mehrerer
Veränderlicher

Simath-Reihe "Skripten zur Höheren Mathematik"

3. Physics:

- Tilo Fischer/Hans-Jerg Dorn

Physikalische Formeln und Daten

Klett, 1992

1.51 Errors/History

Errors/Problems/History

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General known problems

History and corrected bugs

1.52 Problems

Problems without direct error messages

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* 3D plotter opens gfx-screens but aborts with the message

"Out of memory!"

Reason: Not enough memory for internal point matrix.

Select a coarse grid.

* Cannot select screen mode. "New"-gadget is inactive.

Reason: You are using asl.library < V38 !

Install Workbench 2.1 or higher.

* Some values have a (?) added

* derivation values form symbolic and numerical derivation

differ after the comma

* derivation values of numerical derivation are wrong

* 3rd derivation look weired

Reason: errors in floating point calculation.

Reduce precision (0.0001 -> 0.001)

Select "Symb. Deri." in the prefs-menu.

* Funky does not react anymore, when plotting an integral

function.

Reason: vertical asymptote. Press <ESC> and wait.

In very severe cases (I did not have that for

a long time!) you save all data from other

programs and RESET your computer ;-)

* 2 or more zeroes are displayed at the same position

* same for intersection points

Reason: errors in floating point calculation

* After entering a function, Funky says

"xxx derivation, ERR 16: Function too komplex"

Reason: Funky cannot build internal symbolic derivations.

Turn this of with "Messages/If needed" in the prefs.

1.53 History and corrected bugs

History

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Version 5.2: This is the first english release

(28.12.95)

1.54 Funky Index

Sorry - not available! (I am just too lazy....)