Debian-Science
A Custom Debian Distribution for sciences

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Gliederung

1 Current status

2 Better science support in CDD

3 Plan for Realisation
   - Science tools
   - Astronomy
   - Biology
   - Chemistry
   - Electronics
   - Geography
   - Mathematics
   - Physics
   - Others
Who is willing to work?
Existing scientific CDDs

- Debian-Med  Strong focus on Microbiology
- Debian-GIS  Geographical Information Systems (especially GRASS)
- DebiChem   Chemistry
Why not more?

- Idea of CDD needs some time to penetrate
- Advantages are not widely known
- Nobody likes to do the grunt work
Debian-science mailing list

- Scientific user support
- Does not really focus on CDD and tools
- Slack discussion of scientific issues in Debian
Categorisation

- DebTags
- Debram
Debian-Science CDD

• CDD provides straightforward access to package pool
• No need for searching interesting packages
• Engagement for packaging more scientific Free Software
• Further addons like user menus, preconfiguration, ...
Strategies for meta-package bundling

- Several packages covering different sciences
- How fine grained separating sciences?
- Separate meta-packages for development packages
- Separate meta-packages for documentation packages
Science specific meta-packages

- science-astronomie
- science-biology
- science-chemistry
- science-geography
- science-math
- science-physics
- ...
Common science utilities

- science-visualisation (-plotting)
- science-statistics (-data_processing)
- science-diagrams
- science-typesetting (-publishing)
- science-bibliography
- Collect dependencies at *Classification page*
- Decide which items are really supported by applications in Debian
- Sort out those where there is no specific Free Software
Science tools

visualization gnuplot, labplot, mayavi etc.,

data processing octave, R

    diagrams dia, xfig

publishing \LaTeX, bibtex etc.,
Fields of science: Astronomy

Take over dependencies from education-astronomy

Recommends: gpredict, kstars, ssystem, starplot, stellarium, xplanet, xplanet-images

Suggests: celestia, gstar, spacechart, stars, sunclock, xephem, xtide, xtide-data

Missing in education-astronomy

Recommends: astronomical-almanac, lightspeed, openuniverse

Suggests: cl-geodesics
Fields of science: Biology

Take over dependencies from med-bio

**Depends:** adun.app, amap-align, biosquid, blast2, boxshade, dialign, fastdnaml, fastlink, garlic, gdpc, gff2aplot, gff2ps, ghemical, gromacs, hmmer, kalign, loki, melting, mipe, mummer, muscle, ncbi-epcr, ncbi-tools-bin, ncbi-tools-x11, njplot, perlprimer, poa, primer3, probcons, proda, pymol, r-cran-qtt, rasmol, readseq, seaview, sibsim4, sigma-align, sim4, t-coffee, tigr-glimmer, tree-puzzle | tree-ppuzzle, treeviewx, wise

**Recommends:** textopo

**Suggests:** arb, bugsx, clustalw, clustalw-mpi, clustalx, molphy, mozilla-biofox, phylip, treetool
Fields of science: Biology (continued)

Take over dependencies from \texttt{med-bio-dev}

\textbf{Depends:} bioperl, libbio-ruby, libncbi6-dev, mcl, python-biopython

\textbf{Recommends:} libvibrant6-dev

\textbf{Suggests:} biomode, r-base-core

\textbf{Suggested} \textit{science-genomics}??
Fields of science: Chemistry

Take over dependencies from education-chemistry

**Recommends:** chemtool, easychem, gchempaint, gdis, gchemical, gperiodic, kalzium, pymol, viewmol, xdrawchem

**Suggests:** lum, mek, rasmol, xem, xpovchem

**Tagged by** debram:

**Recommends:** apbs, libmopac7-0, mpqc, psi3, gromacs | gromacs-lam | gromacs-mpich, easychem, gdpc, polyxmass

**Suggests:** gdpc-examples
Fields of science: Chemistry (continued)

science-chemistry-dev: libmopac7-dev, gromacs-dev
science-chemistry-doc: gromacs-doc, polyxmass-doc
Fields of science: Electronics

Take over dependencies from *education-electronics*

**Recommends:** gpsim, gpsim-logic, kicad, kicad-doc-de, kicad-doc-en, kicad-doc-es, kicad-doc-fr, ksimus, ksimus-boolean, ksimus-datarecorder, ksimus-floatingpoint, oregano, qucs

**Suggests:** eagle, electric, freehdl, gpsim-lded, gtkwave, pcb, vipec, xcircircuit

**Tagged by** *debram*:

**Recommends:** atlc, cassbeam, drawtiming, nec, xnecview, geda, libgeda20, geda-gattrib, geda-gsymcheck, geda-symbols, geda-utils, gnuicap, transcalc, necpp, xsmc-calc, mpb, vipec

**Suggests:** atlc-examples, geda-examples
Fields of science: Electronics (continued)

**science-electronics-dev**: confluence, libgeda-dev, libnecpp-dev, verilog, vbpp, vbs

**science-electronics-doc**: geda-doc, mpb-doc

Connection to *science-physics*??
Fields of science: Geography

Take over dependencies from *education-geography*

**Suggests:** grass

**Missing in** *education-geography*

**Recommends:** drawmap, gdal-bin, kgeography, libgeo-coordinates-utm-perl, libgeography-nationalgrid-perl, libgeo-helmerttransform-perl, libgeo-metar-perl, libgeo-postcode-perl, libgeos2c2a, libgeos-c1, ogdi-bin, qgis, qgis-plugin-grass, postgis, proj, thuban

**Suggests:** geotoad, gspbabel, libmapnik1d, libogdi3.2, libterralib1c2a, r-cran-mapdata, r-cran-maps
Fields of science: Geography (continued)

**science-geography-dev:** grass-dev, libgeos-dev, libmapnik-dev, libogdi3.2-dev, libpostgis-java, libqgis0-dev, libterralib1-dev, mapnik-plugins, mapnik-utils, python-gdal, python-mapnik

**science-geography-doc:** grass-doc, libgeos-doc, libterralib1-doc, proj-ps-doc
Fields of science: Mathematics

Suggested subgroups:

- science-math-arithmetic
- science-math-geometry
- science-math-numerics
- science-math-statistics
- science-math-misc
Fields of science: Mathematics (continued)

Take over dependencies from education-mathematics

Recommends: drgeo, geg, gnuplot, grace, kig, kmplot, kpercentage, kseg, mathwar, maxima, octave, pari-gp, xabacus, xaos, xeukleides, yacas

Suggests: abakus, drgenius, k3dsurf, kalgebra, kbruch, kgeo, kregexpeditor, magicssquare, qliss3d, scilab, xarith

Tagged by debram or debtags:

Recommends: dome, freefem3d, geomview, gmp-ecm, libjts-java, qhull-bin, tela
Fields of science: Physics

Suggested subgroups:

- science-physics-geo
- science-physics-fluid-dynamics
- science-physics-mechanical
- science-physics-particle
- ...
Fields of science: Physics (continued)

Take over dependencies from education-physics

Suggests: kturtle, lum, mek, xem, xoscope

Tagged by debram or debtags:

Recommends: tessa | tessa-mpi, gaussssum, lightspeed, tochnog

Suggests: libphtools2, libalps-heap1 | libalps-light1 | libalps-mpi1 | libalps-pvm1
Fields of science: Physics (continued)

`science-physics-dev`: libphtools2-dev, libalps-heap1-dev | libalps-light1-dev | libalps-mpi1-dev | libalps-pvm1-dev

`science-physics-doc`: tochnog-doc
Other suggested sciences from the Wiki

- science-agricultural
- science-anthropology (same as archaeology?)
- science-architectural
- science-climatology
- science-economics
- science-hci
- science-linguistics
- science-pharmaceuticals (duty of Debian-Med)
- science-psychology (duty of Debian-Med)
- science-signal-processing
- science-sociology
- science-structural
This talk can be found at
http://people.debian.org/~tille/talks/
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