

News from FastJet: Contrib, Core

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and several FjContrib contributors

Boost 2013
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FastJet

bug-fix releases for 3.0.x (and 2.4.x) series

3.1.x under development (speedups for $N \sim 5k-100k$)

NEW: FastJet Core (a.k.a. fjcore)

for lightweight inclusion of core FJ functionality into other codes

NEW: FastJet Contrib (a.k.a. fjcontrib)

a frequently released package for 3rd party code

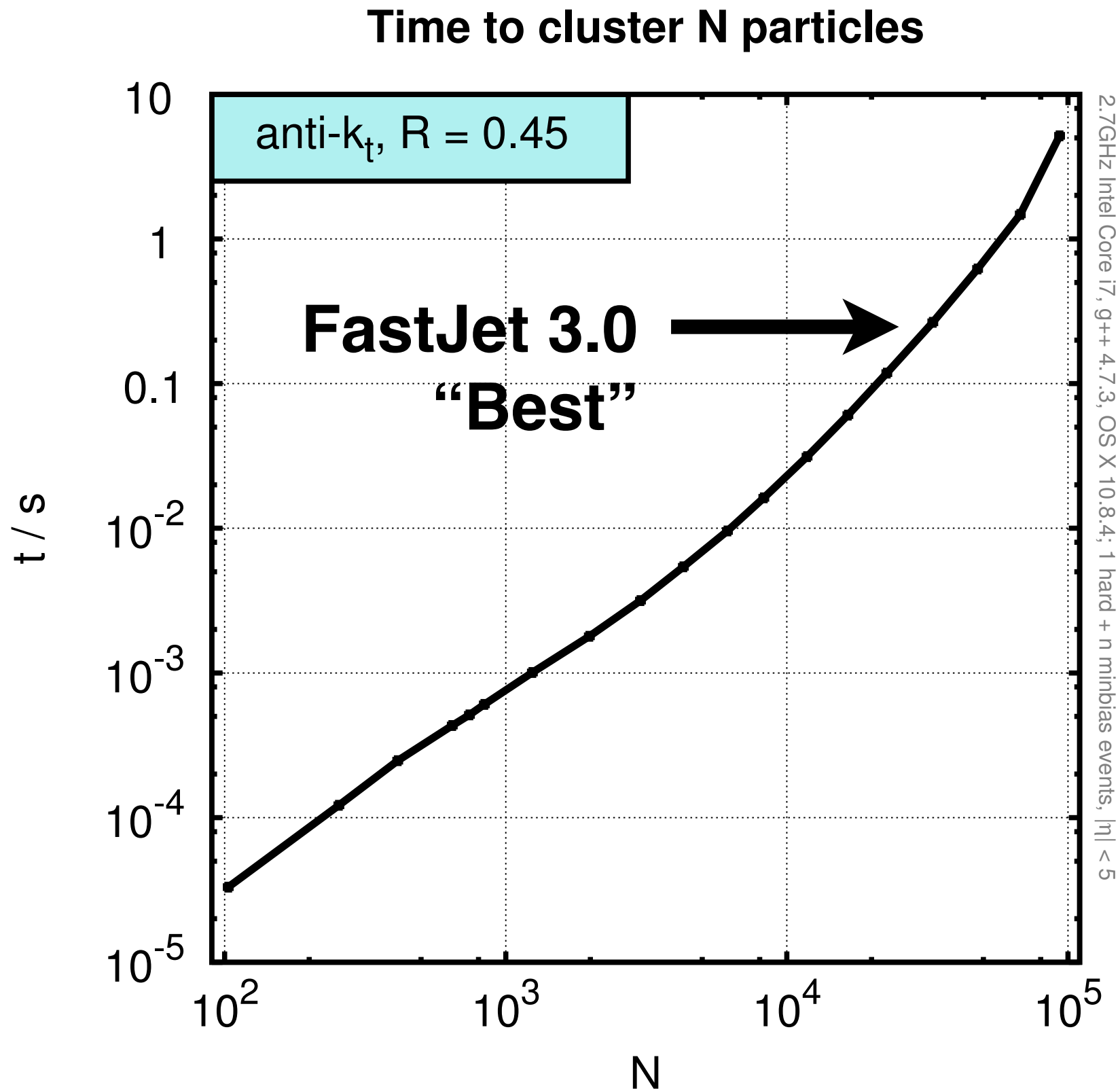
FastJet: plans for v3.1

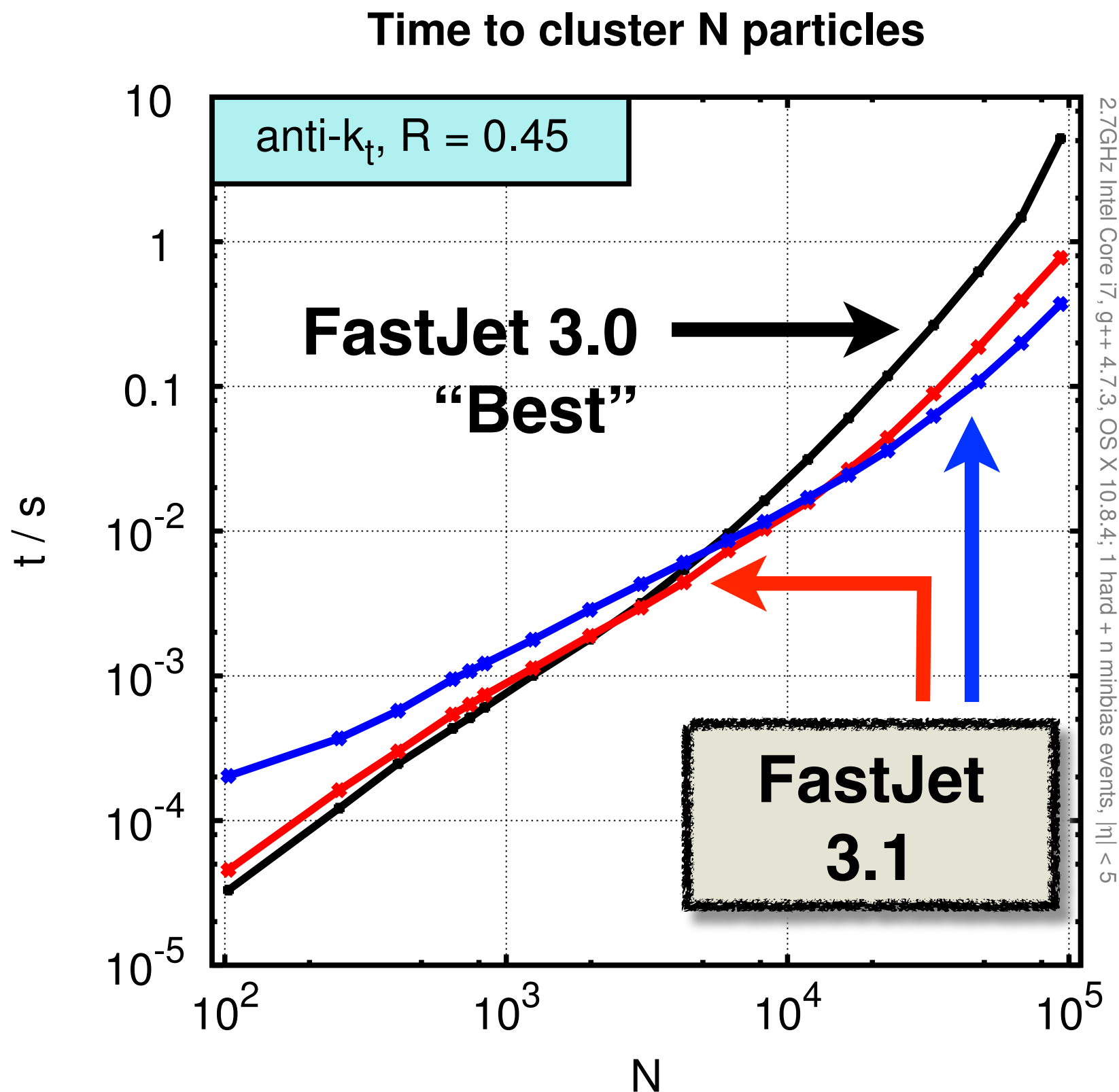
[release schedule currently vague!]

small interface enhancements

issue fix: CGAL coincident points

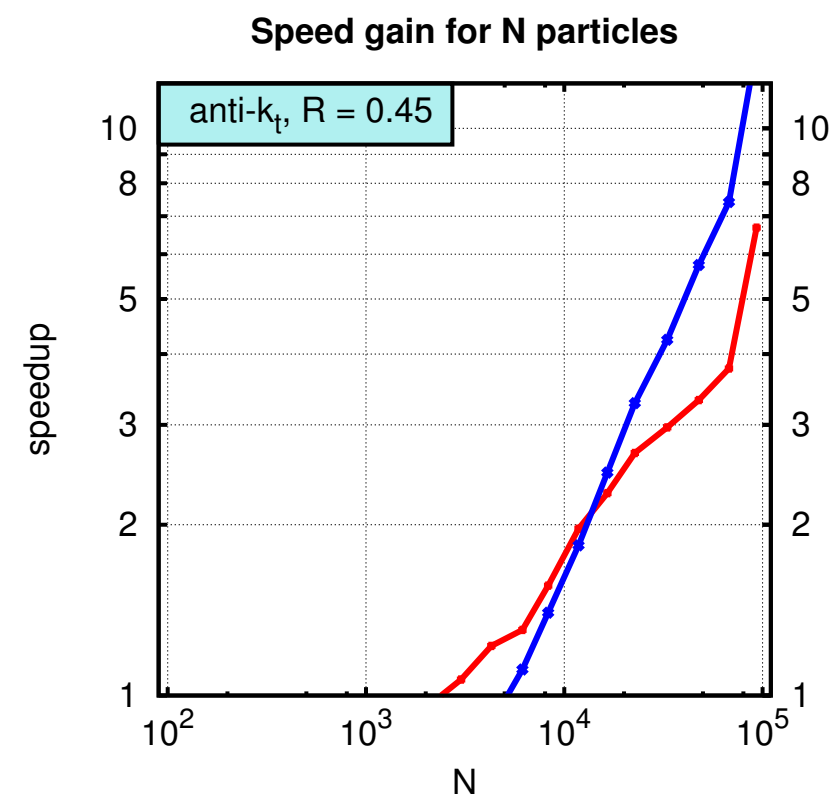
speed improvements

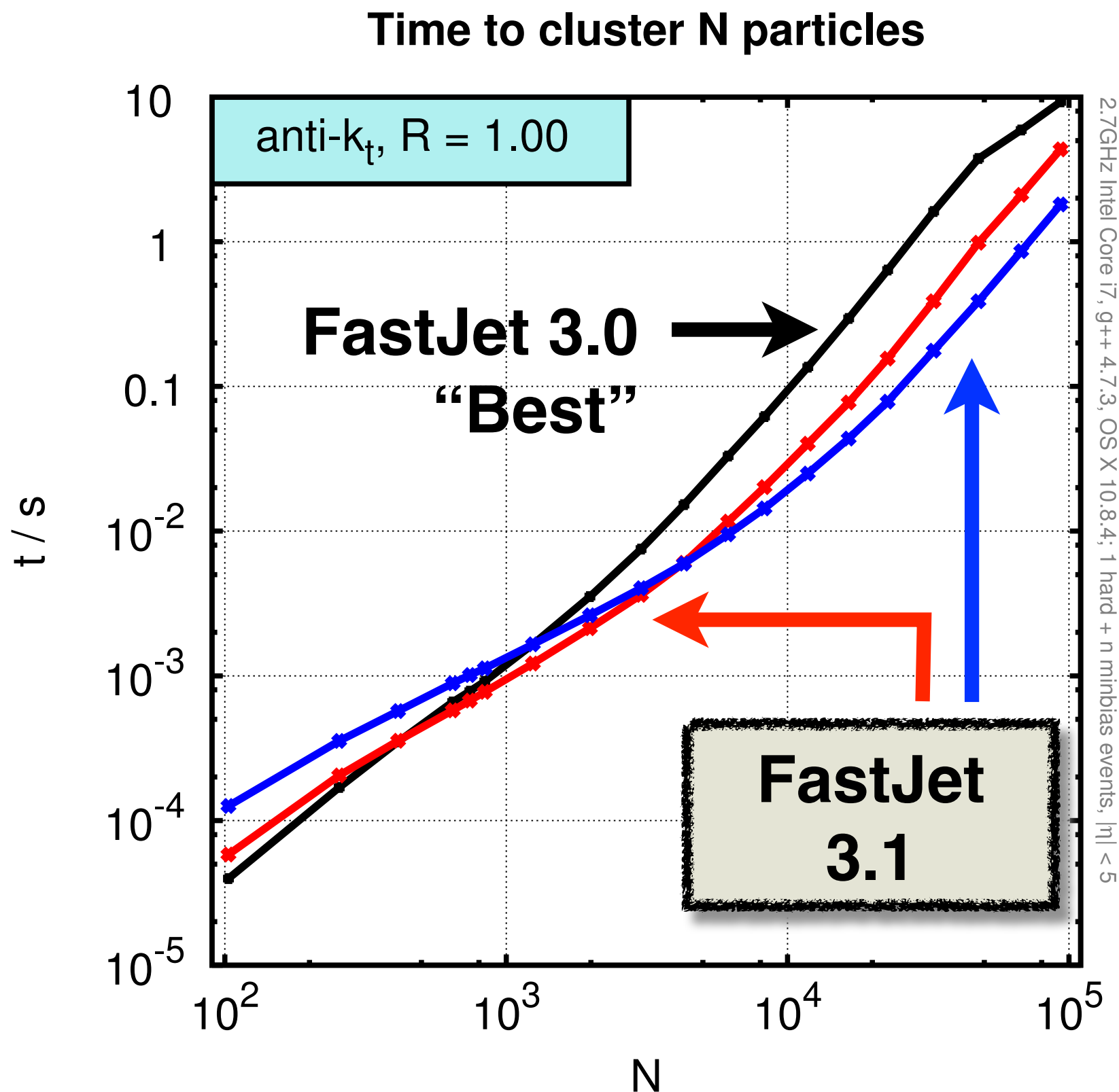




Two new “tiled” clustering strategies

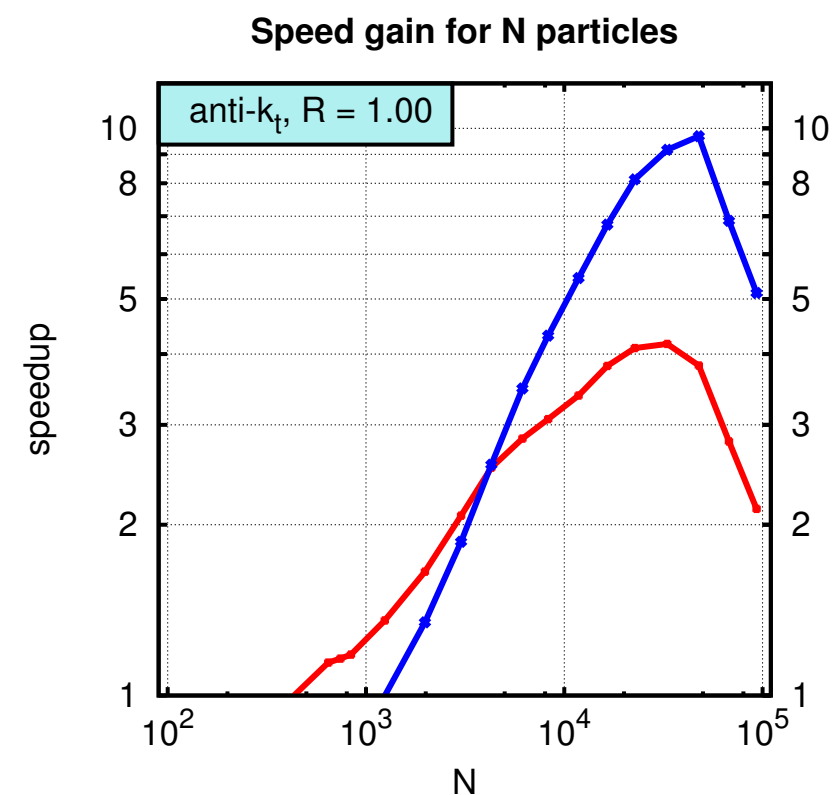
Updated automatic strategy selection is work in progress





Two new "tiled" clustering strategies

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FastJet “core”

- Many public programs use jet finding (Pythia examples, MCFM, Sherpa, ...)
- Sometimes it's not convenient to ask users to download FastJet, compile & install it. E.g. for MC tutorials:
 - on a conference network, 2MB can take a while to download
 - 2-4 minutes compilation is a significant chunk of a 1-hour tutorial!
- As a workaround, some programs have their own native jet clustering (but not necessarily fast, etc.)

E.g. Pythia8's SlowJet

A solution: FastJet “core” (aka fjcore)

- Identical interface (except namespace fastjet → namespace fjcore)
All native jet finding (fast gen- k_t clustering strategies, except CGAL)
Selectors
- Leaves out: areas, plugins, tools
- just 2 files: fjcore.hh & fjcore.cc
60kB compressed (v. 2.2MB),
builds in a few seconds (v. a couple of minutes)
- can coexist with full FastJet

FastJet Contrib

<http://fastjet.hepforge.org/contrib/>

FastJet sees a “new-feature” release (e.g. 3.0 → 3.1) every 1–2 years.

But:

1. The field is developing on a faster timescale
(FJ can't realistically keep up)
2. Our advisers warn us against “mission creep”
(maybe FJ shouldn't try to keep up)
3. The existing “tools” page was not very convenient for users who just want the full set of latest/best/etc. tools
(individual downloads, different build systems, ...)

Our solution: FastJet Contrib

- Hepforge hosts the svn repository & web pages
- We provide an overall framework
(build system, checks, version handling, releases)
- Contributors provide “contribs” – self-contained code
(based on an fjcontrib template, for uniformity, must include an example and a make check target)

Guiding principle

balance ease of contribution, quality of the packages

Standard-looking build & install

```
wget http://fastjet.hepforge.org/contrib/downloads/fjcontrib-1.005.tar.gz -O - | tar zxvf -
cd fjcontrib-1.005.tar.gz

./configure [--fastjet-config=FILE] [--prefix=...] [...]
make
make check          # optional
make install
```

User pulls in what they need, e.g.

```
#include "fastjet/contrib/Nsubjettiness.hh"
#include "fastjet/contrib/GenericSubtractor.hh"
using namespace fastjet::contrib;
. . .

// 2-subjettiness
Nsubjettiness nSub2KT(2, Njettiness::kt_axes, beta, R0, Rcut);
// pileup subtraction for shapes
GenericSubtractor gen_sub(rho);

double subtracted_tau2 = gen_sub(nSub2KT, jet);
```

must explicitly link with: `-lGenericSubtractor -lNsubjettiness`

Basically (see [DEVEL-GUIDELINES](#) for more details)

```
# check out the overall contrib directory
svn checkout http://fastjet.hepforge.org/svn/contrib/trunk fjcontrib
cd fjcontrib

# start your new contrib, choosing your own "ContribName"
scripts/new-contrib-from-template.sh ContribName

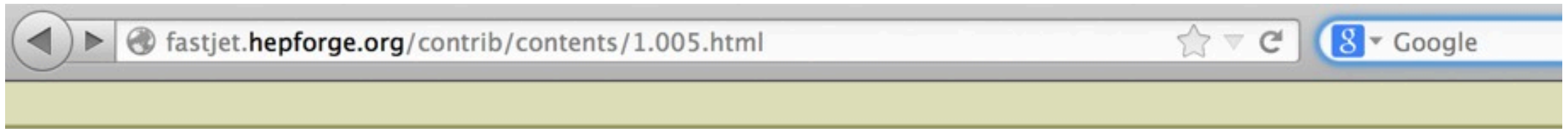
# once you have something worth committing, ask us for an account and then
scripts/register-new-contrib.sh ContribName

# carry on developing, svn add / commit / etc.
# we're happy to provide advice on the user & FJ interface, etc.

# Once you're ready to make a release of your contrib, run
scripts/release-contrib.sh ContribName

# send us a mail, and we'll release a new version of the whole fjcontrib
# (we may also provide suggestions for uniformity/code safety/etc.)
```

fjcontrib: current contents

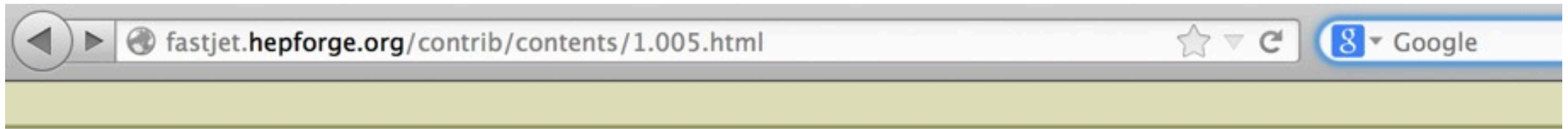


- fastjet.fr
- fastjet-contrib
- contrib svn

Version 1.005 of FastJet Contrib is distributed with the following packages

Package	Version	Information
GenericSubtractor	1.2.0	README NEWS
JetFFMoments	1.0.0	README NEWS
VariableR	1.0.1	README NEWS
Nsubjettiness	1.0.2	README NEWS
EnergyCorrelator	1.0.1	README NEWS
ScJet	1.1.0	README NEWS

fjcontrib: current contents



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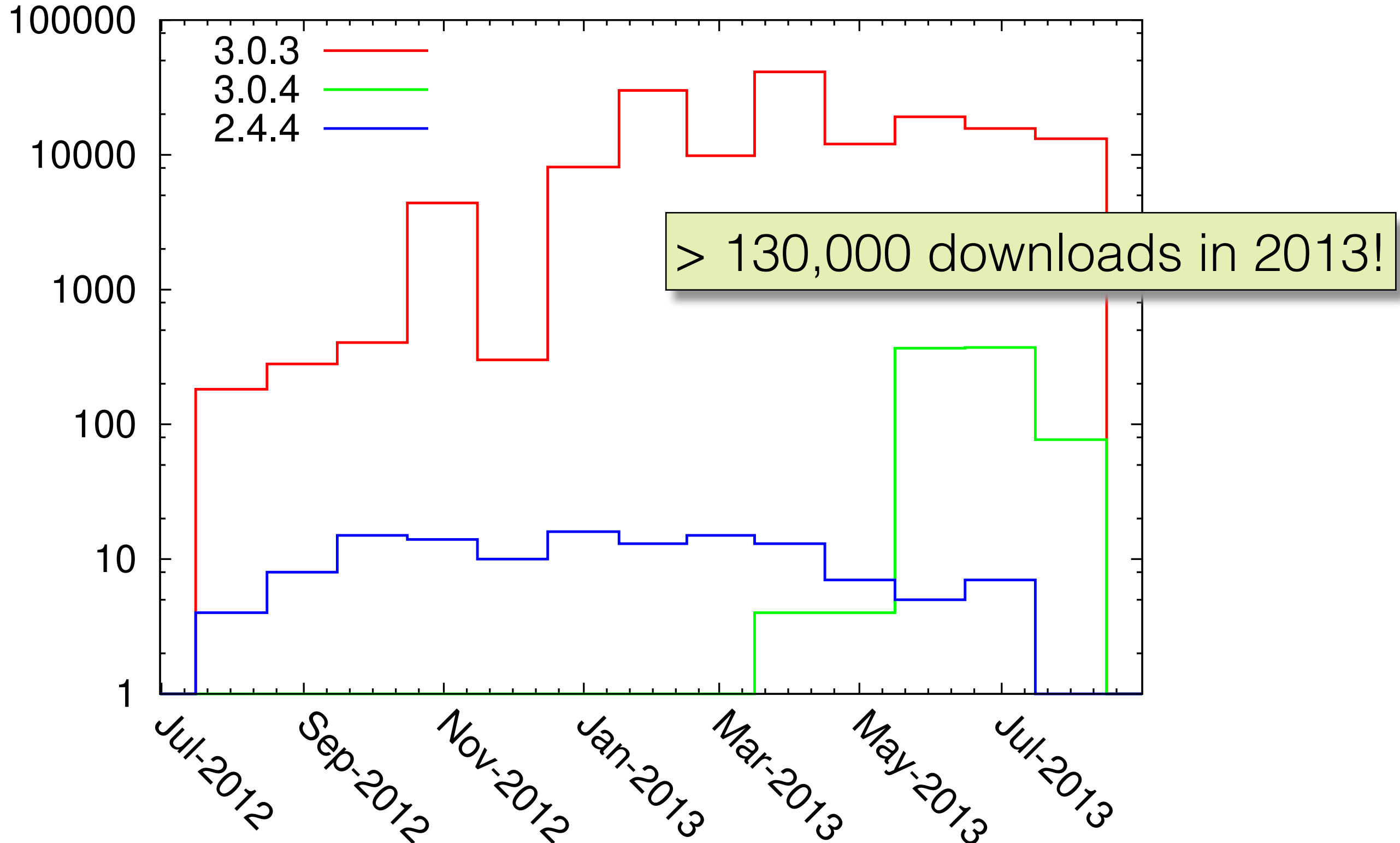
Be there or be square!

If you need help come and see me (or send us mail)

EXTRAS

- it builds only static libraries
- support for dependencies
 - with external tools (root, etc.?)
 - between different contribs
 - large datafiles
- fjcontrib-config
- consistent documentation (doxygen?)

FastJet downloads / month



> 130,000 downloads in 2013!