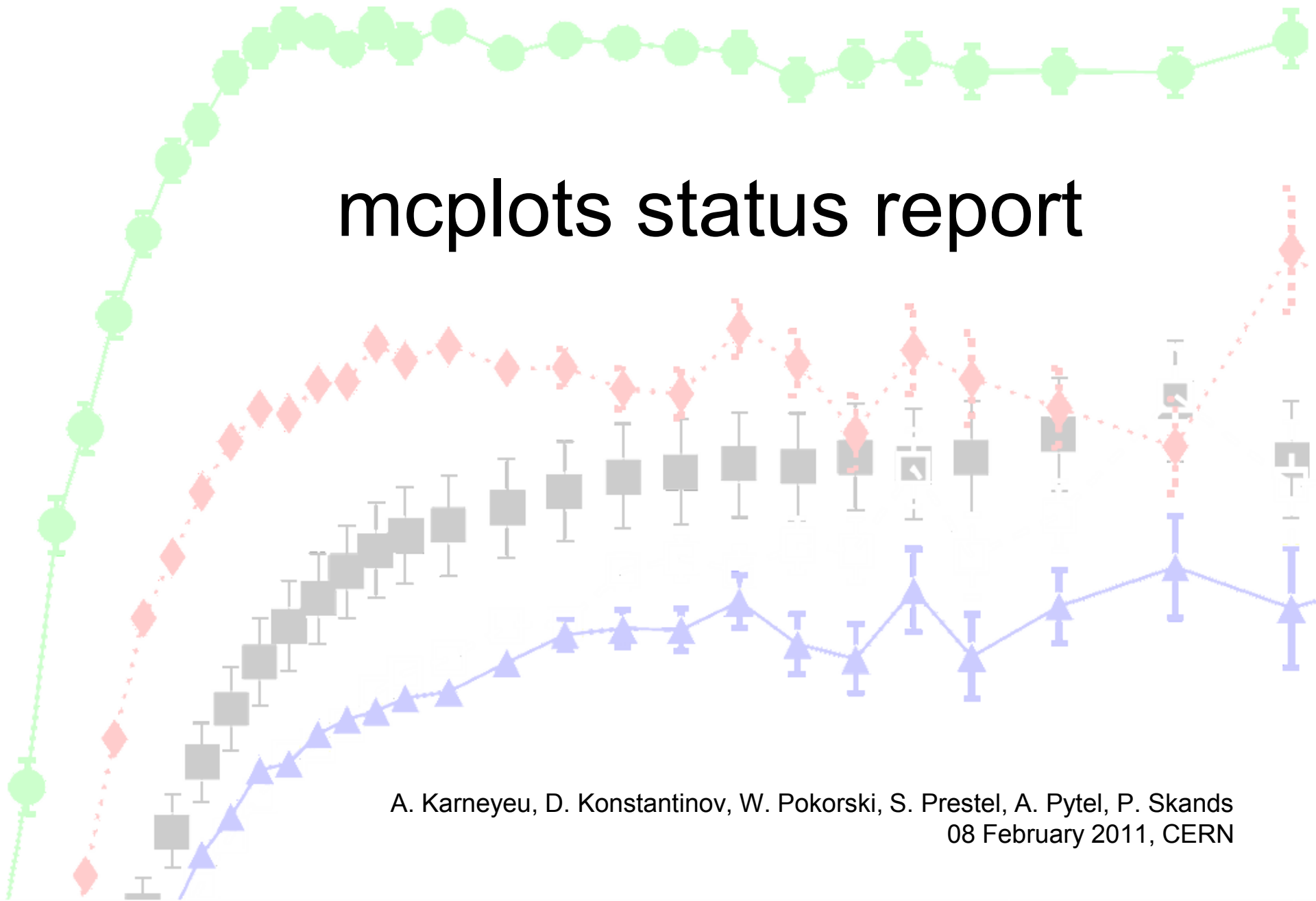# mcplots status report

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Purpose

- Systematize distributions of observables available from different MC generators/tunes and data sets
- Provide a simple graphical front end allowing users to browse easily through relevant plots

→ Front Page
→ Test4Theory@Home

Beam: `pp/ppbar` ee

Jets

→ Di-jet χ
→ Di-jet Δφ
→ Di-jet mass
→ Jet Fragmentation
→ Differential shape
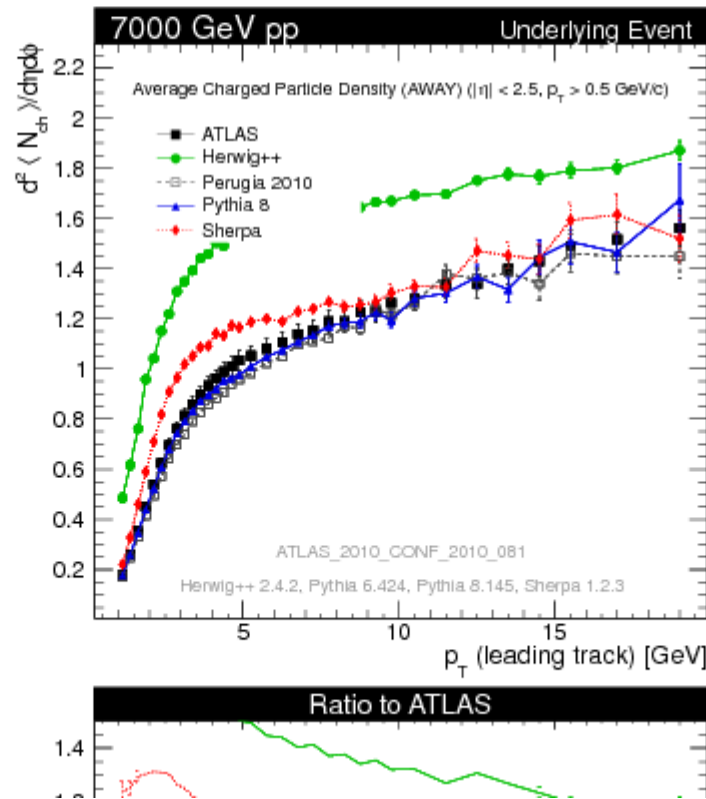→ Integral shape
→ Integral shape vs pT

Underlying Event

→ <Nch> vs Δφ
→ `<Nch> vs pT1 (AWAY)`
→ <Nch> vs pT1 (TRNS)
→ <Nch> vs pT1 (TWRD)
→ pT (TRNS)

Underlying Event : <Nch> vs pT

Tune group: `Main` Herwig++ Pythia 8 Sherpa Py6-LHC Py6-Tev

pp @ 7000 GeV

ATLAS pT>0.5

7000 GeV pp — Underlying Event
Average Charged Particle Density (AWAY) ($|\eta| < 2.5$, $p_T > 0.5$ GeV/c)

- ATLAS
- Herwig++
- Perugia 2010
- Pythia 8
- Sherpa

$d^2 \langle N_{ch} \rangle / d\eta d\phi$

ATLAS_2010_CONF_2010_081
Herwig++ 2.4.2, Pythia 6.424, Pythia 8.145, Sherpa 1.2.3

p_T (leading track) [GeV]

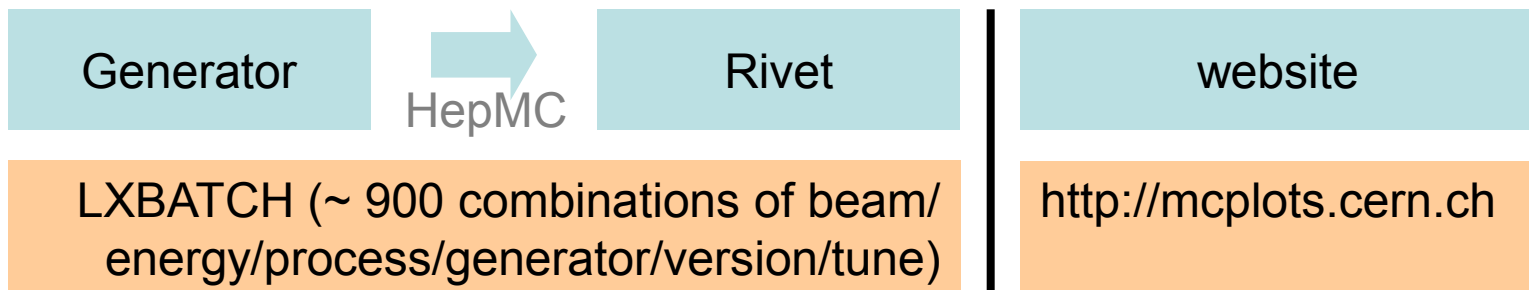**Ratio to ATLAS**

http://mcplots.cern.ch/

Current abilities

- Supported generators: Pythia6, Pythia8, Herwig++, Sherpa, Vincia

- Supported processes: Hard QCD, Minimum Bias, Drell-Yan

- Number of observables ~ 100

Implementation details

- AGILe as interface to Fortran-based MC event generators
- Rivet as a library of experimental analyses
- CERN LXBATCH for MC production
- MySQL/PHP/Apache for website

Generator	→ HepMC	Rivet	website
LXBATCH (~ 900 combinations of beam/energy/process/generator/version/tune)			http://mcplots.cern.ch

Future plans

- Use BOINC for MC production
- Add 'Validation' page for changes tracking
- Add more analyses