PUNCH 2.0 - Use Cases April 14th, 2025

Analysis of big data sets, visualization, live interaction

[astro / astroparticles]

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#1: Distributions in Databases

1) What it is about

Advanced statistics integration in data selection, in particular first-class distributions in relational databases

2) Covered communities (target) Astronomy, Astroparticle

3) Involved components

TAP/ADQL (and other VO standards) Postgres as reference implementation

4) Rough resource estimate

1 FTE software development 0.5 FTE concept development 0.5 FTE roll-out and IVOA liaison

5) Involved/interested partners

AIP, HITS, U Heidelberg, Tautenburg

#2: Large data processing

1) What it is about

(Re)processing of large data sets from (radio astronomical) observations, smooth connection of the available tools

2) Covered communities (target)

Start with radio astronomy, astronomy in general, and simulations, but will be useful for all

3) Involved components

Remote archives, C4P, S4P, Git, user management (AAI) and possibly fine-grained access management necessary, REANA, DRP, WF sharing

4) Rough resource estimate

1FTE setting up AAI management prototype, 1FTE developing management system for job request (analyse requirements), 1 FTE optimized data cache allocation

5) Involved/interested partners

AIP, DESY, Tautenburg