

Performance of the LOTAAS v.1 pipeline on cartesius

Time taken by the individual pipeline components per beam (24-core node):

fits2fil: 6min

rfifind: 15min

mpiprepsubband (253 trials): 3min

single pulse search: 1min

realfft: 10sec

rednoise: 10sec

accelsearch (-zmax=0 ; -numharm=16): 1min20sec

accelsearch (-zmax=50 ; -numharm=16): 12min

plots: 20sec

python sifting and folding: 21min

pfd scrunching: 5sec

data copying: a few secs

candidate scoring: a few secs

Total time spent for the first large set of DM trials (0-4000)

mpiprepsubband 40min

sp:16min

realfft:3.5min

rednoise:3.5min

accelsearch (zmax=0;numharm=16):21min

Total time spent for the second large set of DM trials (4000-10000)

mpiprepsubband 24min

sp:8min

realfft:2min

rednoise:2min

accelsearch (zmax=0;numharm=16):11min

Total % time spent for a beam processing (zmax=0;numharm=16)

Fil conversion: 3%

Rfifind: 9%

Dedispersion: 37%

Single-pulse search: 14%

Realfft: 3%

Rednoise: 3%

Accelsearch: 18%

Folding: 12%

data copying/etc 1%

Total processing time per beam (zmax=0;numharm=16): ~3hours

Total processing time per beam (zmax=50;numharm=16): ~7hours

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