Current user groups

These are the main user groups of the Para Cluster and as such recored in the paragp group.

Group Supervisor: Joop Schaye
Group Contact: Alex Richings
Group Paracluster Users: Alex Richings, Marco Velliscig, Monika Turner, Marijke Segers, Marcello Cacciato, Chris Barber, Sylvia Ploeckinger

Justification: We use paracluster to run galactic and cosmological simulations. Paracluster is particularly useful for us to test new models in our simulations on small runs before we we use them in full scale runs on much larger supercomputers in Durham and Munich. We also use paracluster to analyse the snapshots from these simulations, as it is the only machine at the Sterrewacht that has enough memory to handle the data from some of our larger simulations.

Group Supervisor: Huub Rottgering
Group Contact: Leah Morabito
Group Paracluster Users: Leah Morabito, Timothy Shimwell, Wendy Williams, Duy Hoang. Joshua Albert

Justification: We use the paracluster to process LOFAR data. It is particularly useful to process jobs simultaneously on large numbers of files, test features of the LOFAR software, and make widefield images. The paracluster is the only machine in the Sterrewacht that has enough memory for some of these images, and the ability to run jobs simultaneously reduces our data processing time by factors of at at least 10-20.

Group Supervisor: Simon Portegies Zwart
Group Contact: Lucie Jilkova
Group Paracluster Users: Lucie Jilkova, Edwin van der Helm, Carmen Martinez Barbosa, Tjarda Boekholt, Noel Lopez Gonzaga, Alex Rimoldi, Dan Caputo, Arjen van Elteren, Steven Rieder

Justification: Members of the Computational Astrophysics working group use the para cluster to run and process simulations of various astrophysical problems. Most of the simulations use the software environment AMUSE that couples together different codes and physical scales. AMUSE (and the community codes it includes) supports parallel computing. The para cluster is especially practical as a local and flexible laboratory to test, run, and scale the simulations before running them on larger facilities if necessary. We also use the para cluster for embarrassingly parallel problems like parameter space studies or Monte Carlo runs.

Group Supervisor: Ewine van Dishoeck
Group Contact: Paola Pinilla
Group Paracluster Users: Paola Pinilla, Nicola Kroon, Francisco Javier Salgado Cambiazo

Justification: We use paracluster to model the effect of planets embedded in protoplanetary disks. In particular we run 2D and 3D hydrodynamical simulations to study the effect of different disk and planet parameters such as viscosity, pressure scale height, external radiation, cooling and heating processes. The results of these models are then compare with observations of transition disks.

Group Supervisor: Henk Hoekstra & Koen Kuijken
Group Contact: Massimo Viola
Group Paracluster Users: Henk Hoekstra, Koen Kuijken, Massimo Viola, Marcello Cacciato, Martin

Eriksen, Fabian Köhlinger

Justification: We use the paracluster to compute the Monte Carlo Markov Chains and associated quantities for the scientific analysis of the KiloDegree Survey (KiDS). These calculations are done infrequently, but require a fair number of nodes for a relatively short period of time. The calibration of shape measurement algorithms for Euclid relies on extensive image simulations which need to be analysed. This is another computationally intensive task well-suited for the paracluster.