

NuGrid in one page

The NuGrid Goals: The Nucleosynthesis Grid collaboration (NuGrid, www.nugridstars.org) develops and maintains tools for large-scale post-processing nucleosynthesis simulations with up-to-date and flexible nuclear physics input, and apply these to study the production of the elements in quiescent and explosive nuclear production environments. A key goal is to facilitate research involving nuclear physicists and astrophysics modelers to identify the most urgent nuclear data needs. Typical data products are yield sets covering different stellar sites and metallicity space, in collaboration with teams working in nuclear astrophysics, galactic chemical evolution and near-field cosmology. The published data are made available to the open nuclear and astrophysics communities. We also provide flexible tools to extract and analyze the trajectories and nucleosynthetic data.

The NuGrid Team: The NuGrid collaboration brings together expertise in stellar evolution, stellar explosions, nucleosynthesis, nuclear physics and galactic chemical evolution to develop the tools and databases needed to calculate comprehensive nucleosynthetic yields and errors in these yields. At present, the NuGrid team is made of 61 junior and senior members from 26 different institutes in North America, Europe, UK, China and Australia. Six members are serving as PIs of the collaboration, with yearly changes of the PI team. We rotate these responsibilities among active members, including junior researchers. We are accepting new members into the collaboration.

The NuGrid Manifesto: Activities, sharing of data and knowledge across the collaboration are organized according to the Manifesto available here (<https://nugrid.github.io/content/manifesto>). Two broad styles of contribution to the collaboration are recognized: “collaboration” and “participation”. Within the conditions identified in the Manifesto, the NuGrid tools including the parallel network code and unpublished data, are available to both NuGrid collaborators and participants.

The research areas: NuGrid members are driving active research areas in stellar evolution and nucleosynthesis, impact studies of nuclear reactions, supernovae, galactic chemical evolution, nucleosynthesis in compact objects and a variety of other processes relevant for the production of stable and radioactive isotopes. Among many different stellar nucleosynthesis conditions, we have active projects focused on the study of the s process, the p process, the rp process, the i process and the n process. Examples of recent publications making use of the NuGrid tools from the past year include [Denissenkov et al. 2021](#), [Hubbard et al. 2021](#), [Ota et al. 2021](#), [deBoer et al. 2021](#), [Lawson et al. 2022](#), [den Hartogh et al. 2022](#) and [Battino et al. 2022](#).

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