

THE GCE SYGMA (Stellar Yields for Galaxy Modeling Applications) module

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The Stellar Yields for Galactic Modelling Applications (SYGMA) module combines the NuGrid yields and other stellar feedback in a single Python, Fortran or web accessible framework. The module provides the time evolution of the abundances of all the chemical elements of "star particles" that represent single stellar populations (SSPs). It delivers the AGB, SN Ia and massive star contributions of material returned by the SSP after a star-formation burst. Various (including user-supplied) options for standard parameters of chemical evolutions, such as IMF, SN Ia delay-time distribution and SFR are available. An example application of the module would be to model the baryonic feedback of cosmological structure-formation simulations. The module can also be used to describe galactic chemical evolution in the simple single-box approximation. Furthermore, we offer a light version of SYGMA as a vehicle to explore the large NuGrid datasets with an online interface. This allows the community to visualize and perform calculations with sets of data in a interactive python environment.