Small stellar systems, like dwarf galaxies and globular clusters, may be well suited in order to study galactic nucleosynthesis and chemical evolution as, to a first approximation, they can be treated as simple, homogeneous one-component objects.

Currently there is intensive work on determining stellar abundances in Galactic stellar systems (notably globular clusters) and in local-group dwarf galaxies. Many of these projects are actually pursued with the latest instruments, and have revealed surprising results.

Stars in globular clusters, on the one hand, are characterised by a well-defined iron abundance with a small spread, which indicates that they formed from gas that has been pre-enriched. This narrow spread in iron abundance, on the other hand, is in contrast with the widespread abundance anomalies in light elements which are preferentially explained by ‘primordial pollution’ scenarios. The latter may imply, at least to some degree, internal chemical evolution, where presently observed stars formed out of cluster matter polluted by earlier generations of stars, or at least by the more massive objects of the same generation. There are also scenarios which claim that this pollution was due to external field stars in the surroundings of the proto-globular cluster cloud which was part of a small, dwarf-galaxy-like substructure of the Galaxy. This host galaxy was later disrupted by the Milky Way, while its globular clusters survived and are now part of the Milky Way system.

Dwarf galaxies are likely to have formed, as is typical for galaxies, through infall of primordial gas onto a dark-matter halo. They therefore have their own chemical evolution, which, however, is different from that of large galaxies due to the shallower potential wells, thus leading to more efficient mixing and a stronger influence of galactic tides causing harassment and tidal disruption. In addition, outflows of enriched hot gas in galactic winds are very likely to affect these systems. Dwarf galaxies are also investigated in integrated light to derive their star-formation history and age-metallicity relations. Some globular clusters are thought to be cores of former dwarf galaxies, in particular those where multiple populations of stars have been found (such as Omega Cen and NGC 2808).

As globular clusters and dwarf galaxies form a mass sequence and as there are the above-mentioned possible connections between the two classes of stellar systems, the topic of the conference is a confrontation and comparison of cluster and dwarf galaxy chemical evolution, which should be helpful in understanding the origin of the abundances in both classes of object.

For registration and more information, please visit http://www.mpa-garching.mpg.de/~garcon08/. The deadline for preliminary registration and abstract submission is 15 April 2008; final registration closes on 15 May 2008.