

Allostratigraphic Principles and Concepts

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Formal allostratigraphy is a relatively new invention. It dates to the 1983 North American Code of Stratigraphic Nomenclature, when allostratigraphic units were presented to the community as a new type of material unit, defined and identified on the basis of bounding discontinuities. Like other new kinds of units in the 1983 Code, they were introduced to meet “recognized and defined needs of the profession.”

It is appropriate here to spell out specifically what allostratigraphic units ARE. From there, one can compare and contrast these units with other, similar types of geologic units.

Geologic units can be formal or informal. Formal units have the advantage of stability. Informal units are more appropriate for innovative units or those that may be too thin to map. Allostratigraphers recognize their formal fundamental unit, the *alloformation*.

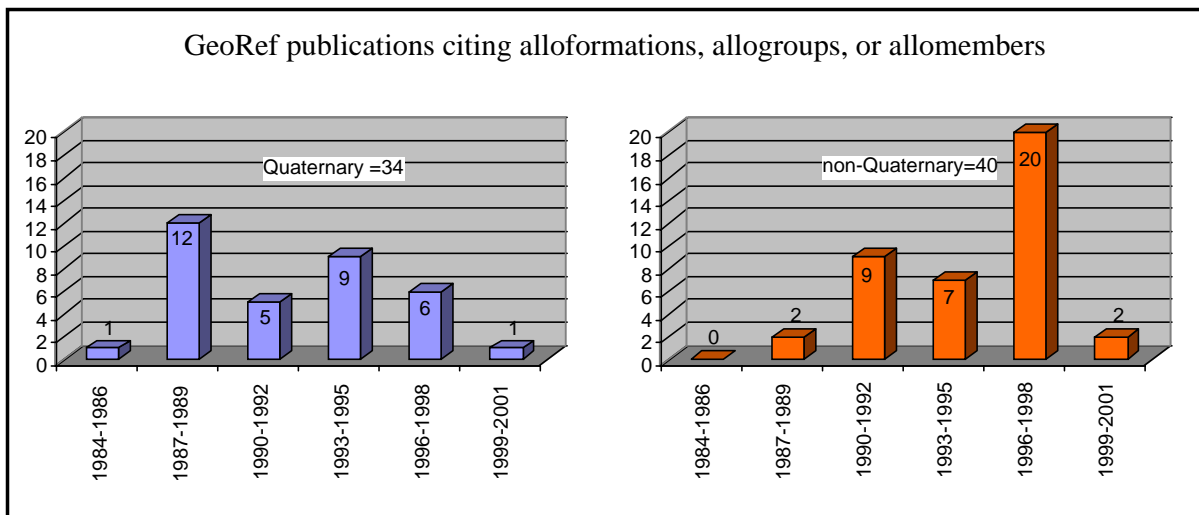
Classification of allostratigraphic units is hierarchical. An alloformation is roughly equivalent in scope to the formation in lithostratigraphy. Where useful, alloformations may be completely or only partly divided into allomembers and may be combined to form allogroups.

Allostratigraphers know what the boundaries of their units are: laterally traceable discontinuities. The choice of the word “discontinuities” was deliberate. Nomenclatural stability is promoted by the requirement of a stratotype. The Code requires: “A type locality and type area must be designated; a composite stratotype or a type section and several reference sections are desirable.”

Mappability is explicitly required. “A formal allostratigraphic unit must be mappable at the scale practiced in the region where the unit is defined.” Working from the stratotype, an allostratigraphic unit “is extended from its type area by tracing the boundary discontinuities or by tracing or matching the deposits between the discontinuities.”

Although allostratigraphic concepts were first spelled out by stratigraphers studying Quaternary strata, these concepts can and have been applied fruitfully to sediments of various geologic ages.

Since the publication of the 1983 Stratigraphic Code, allostratigraphic usage has increased, especially in discussion of specific alloformations, allogroups, or allomembers (see below).



Allostratigraphy, as spelled out in the 1983 Code, was not perfect. Since its publication, this Code has been amended once. The amendment made a clarification to the relation between lithostratigraphic and allostratigraphic units. Additional proposals for clarifications have been published this year.

In summary, allostratigraphy meets the criteria of the NACSN: to promote unambiguous communication in a manner not so restrictive as to inhibit scientific progress.