GEOSTAT is easily situated in the landscape of other methodologies developed for more than 20 years, for example what we call the canonical formalism  These approaches are fundamentally based on statistical assumptions whose origins can be traced back since the seminal works by Kolmogorov in 1941 . Some of the fundamental steps in the development of purely statistical approaches to turbulence are:

   -   the numerous studies demonstrating the multiscale character of turbulent flows, for instance,
   -   the relationships between fully developped turbulence and multiplicative cascades (the bibliogaphy on this subject is immense, we only cite,
   -   the relationships between multiplicative cascades and multiscale geometric entities,
   -   the first approach combining statistics and geometry: multiscale skeletons and WTMM,
   -   fundamental concepts on singularity analysis and their relationships with turbulent flows.

The study of signals in which a hierarchy of geometric structures is evidenced goes far beyond the single domain of fully developped turbulence; it is fundamentally related to signals and systems (universality classes in critical systems) in which the values of singularity exponents give access to global properties of the signal: there is a comon attractor leading the dynamics; note that one important point is the correct evaluation of these exponents. This defines a wide area of research in itself, and justifies the approach undertaken in GEOSTAT; henceforth, geometric structures related to singularity exponents have been studied in geophysical signals of different types, in the study of clouds, pluviometry, and in oceanography, to take only few examples. More generally, the geometrical super-structures computed in the framework of the MMF, and their physical signifiance in the analysis of dynamics, clears the path for new research in many domains were complex signals are available: natural images, time series (including biological data), trafic in networks, econometric data.