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Willi Freeden* (freeden@mathematik.uni-kl.de), MPI -Building 26, Paul-Ehrlich-Strasse, 67663 Kaiserslautern, RP, Germany. *Geosystem Mathematics: Its Role, Its Aim, and Its Potential.*

Current understanding of the highly complex system Earth with its interrelated subsystems and interacting physical, chemical, and biological processes is not only driven by scientific interest but also by a growing public concern about the future of our planet, its climate, its environment, and its resources. Obviously, both aspects, viz. efficient strategies of protection against threats of a changing Earth and the exceptional situation of getting terrestrial, airborne as well as spaceborne data of better and better quantity and quality explain the strong need of new mathematical structures, tools, and methods, i.e., geomathematics.

This overview talk deals with geomathematics, its role, its aim, and its potential. Moreover, the “circuit geosystem mathematics” is exemplified by representative problems. (Received September 12, 2014)