1163-31-728 **Willi Freeden*** (freeden@rhrk.uni-kl.de), Kaiserslautern, Rhineland, Germany. *Multiscale Decorrelative Gravimetry.*

The lecture highlights arguments that, coming from Mathematics, have fostered the advancement of Geodesy, as well as those that, generated by geodetic problems, have contributed to the enhancement in Mathematics. We particularly focus the attention on inverse problems of Geodesy and multiscale mollifier regularization strategies. Two examples are studied in more detail: (i) Vening Meinesz multiscale surface mollifier regularization to determine locally the Earth's disturbing potential from deflections of vertical, (ii) Newton multiscale volume mollifier regularization of the inverse gravimetry problem to derive locally the density contrast distribution from functionals of the Newton integral and to detect fine particulars of geological relevance. (Received September 13, 2020)