Dear Editor,

CIDRe is a newly developed method and stands for: “Constrained Indicator Data Resampling”.
The research was mainly motivated by processing and interpretation of modern potential field data (satellite gravity, gradients of both the Earth´s magnetic and gravity field).
These sets of scattered point data are by far too large for easy numeric handling. In many cases the analysis/the processing of these data and associated parameters give reason to the assumption that the original point density is not really necessary to represent the parameter distribution. Thus a resampling of the data is advising because the resampled data set will minimize processing time which often is a rather time consuming task in Geophysics.
However, simple regular resampling approaches do not lead to satisfying results. Therefore, I developed an irregular and shape conserving parameter-constrained resampling method (“CIDRe”) and an associated GUI-based software for an user friendly application and parameterization.
Recently, the CIDRe approach is used for the purpose of interactive 3-D potential field modeling and visualization.
The algorithmic work-flow and a validation by a synthetic data are presented in the submitted paper. In a second part, a real-world example (satellite gravity at the western South American continental margin) prove the applicability of the new tool.

This manuscript describes research done in the course of my PhD-thesis.

Best regards,

Peter Menzel