How many samples are enough? A theoretical determination of optimal sampling density in environmental-health applications

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A critical sampling grid can be defined for natural variables distributed in space according to rigorous theoretical results and under certain mathematical conditions. Sampling above this critical limit does not substantially improve mapping results of cimate-water-health attributes. The process of determining the optimal sampling density is explained by means of applications where stochastic mapping is involved of the relevant attributes and their interactions across physical-health systems.