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Aspects concerning the identification and assessment of the errors affecting statistical spatial models of climatic parameters

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Any transformation of a discrete variable into a continuous one is subject to uncertainty. Consequently the identification and assessment of errors is essential for avoiding misinterpretations of models describing the spatial distribution of climatic parameters. Our study attempts to identify the main sources of errors affecting the statistical spatial models of climatic parameters and to assess their impact on the accuracy of these models: e.g. errors from data or metadata, models, or results. Imprecision and uncertainty must be evaluated in the spatial modeling process because it seems essential to propose results taking them into account (the uncertainty of the outcome has to be estimated). Managing uncertainty is essential as it plays an increasing significant role in decision-making. In particular, we discuss the georeference errors, the errors derived from the heterogeneity of the studied region, from the spatial representativeness of the station network, the outliers problem, the statistical errors and the propagation of errors from elementary to complex climatic variables.