Model selection for spatially adaptive two dimensional smoothers using a spatially adaptive smoothing algorithm (SALSA2D)

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Abstract: The distribution of animals in a surveyed area can often be highly uneven and thus frequently benefit from modelling methods which permit some areas of the surface to be (markedly) more flexible than others. Recently developed spatially adaptive smoothing methods allow for differential amounts of flexibility across the surface (e.g. Scott-Hayward et al, 2013) however this can add to the model selection task. The spatially adaptive smoothing algorithm (SALSA) developed for one dimensional smoothers (Walker et al, 2011) has been extended for two dimensional applications to meet this model selection task (SALSA2D) and target model flexibility across the surface. The performance of SALSA2D is compared with other spatially adaptive methods with good results. Results are presented for simulated data and illustrated using an environmental impact assessment (EIA) example.

References

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