## BAYESIAN INFERENCE FOR 2001 BRITAIN FOOT AND MOUTH EPIDEMIC

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We present a robust estimation of the key parameters governing Britain 2001 foot and mouth outbreak as a spatial temporal process. We briefly review a couple of statistical models under the simplified assumption of fully observed data. However, a more realistic approach aiming to quantify and explain the epidemic evolution allows for missing (unobserved) infection times for the farms known to be infected as well as for the farms culled on other reasons than infection premises. A Bayesian framework for statistical inference accounts for all uncertainties in a coherent approach. Posterior distributions for the susceptibility, infectivity and spatial kernel parameters are obtained via efficient reversible jump MCMC algorithms. The impact of the control measures is highlighted by varying different parameters according to the most important time events. Predictive risk maps are presented according to the fitted models. The posterior deviance distribution has been used to assess models adequacy and comparison.