

INFERENCE PROBLEMS IN LIVESTOCK DISEASE

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This talk discusses the challenges faced during inference on epidemic data. In particular, we focus on the importance of estimation and model choice for small scale outbreaks. While various kernel densities can be fitted to a given spatio-temporal epidemic data, together with different risk implications, they do not all agree with the process of data generation. We demonstrate using latent residuals, and comparing with DICs, that from some level of epidemic sizes, we select the correct kernel with a good confidence level. As data size diminishes, the ability to distinguish between models diminishes but rigorous statistical inference can still be made for a given model based on experts opinions.