



GIS Research UK 2006

The University of Nottingham

Geographically Weighted Regression (GWR) Workshop

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<http://ncg.nuim.ie/ncg/GWR>

One of the most commonly applied statistical modelling techniques is that of multiple linear regression. A notable shortcoming of this approach when considering geographical information is that standard linear regression model is assumed to be constant over space – that is, the same relationship is assumed to apply between predictor and dependent variables regardless of location. However, there are many situations where this is not the case in reality. Geographically Weighted Regression (GWR) is a statistical spatial analysis technique developed by the presenters over the past decade that allows the modelling of processes that vary over space. GWR replaces single number coefficients in a regression model with a set of parameters surfaces that vary over space, which may be visualised to show how relationships vary geographically across the study region. In this way, GWR provides an insight into the geographical structure of changes in relationships between the variables, and into aspects of the underlying geographical processes.

Participants will be introduced to GWR through a mixture of lectures and practical sessions. In the first part they will gain a grounding in the basics of GWR - in the second part they will gain experience in the more advanced topics. The participants will be given a workbook with self-paced exercises and they will also be provided with sample data sets.

At the conclusion of the workshop participants should have a good general grasp of what GWR is and when it can be applied. They will have the ability to interpret and map the output from GWR and also be able to run the GWR software.