

YMC
XWC

2005
5002



THE SENTINEL METHOD AND POLLUTION IN AN AQUIFER

Yan Shen *University of Chicago*

Abstract of Poster: I will describe the sentinel method for determining the source of pollution in an aquifer from measurements of the pollutant concentration at various points. The sentinel method is a least squares technique used to identify important parameters, from which we can use an algorithm to determine the source of pollution.

The sentinel method can be used in a variety of geometrical contexts depending on the application at hand. For example, rivers can sometimes be treated as one-dimensional while atmosphere over a city would have to be handled as three-dimensional. The case of an aquifer can be treated as a two-dimensional problem. For this reason, tracing pollution in an aquifer is a good example of a multi-dimensional sentinel problem involving interesting mathematics and having potentially important applications.