

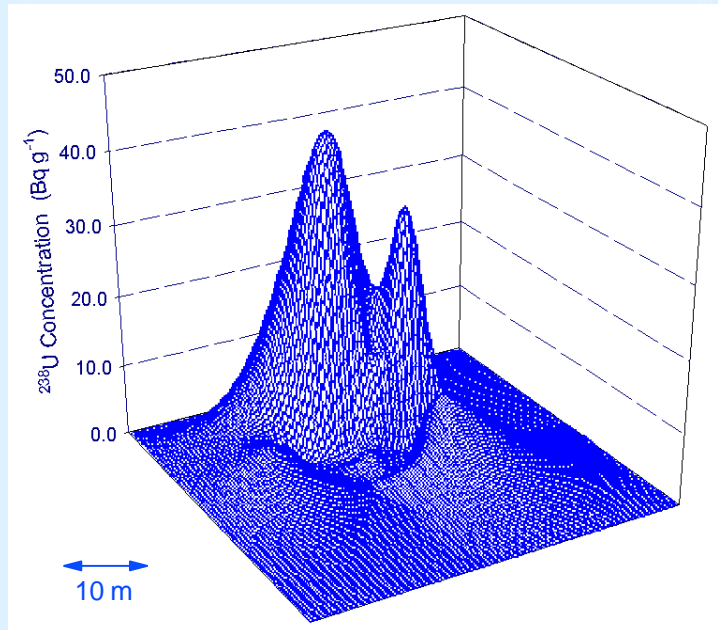
## ISDMAP

A computer program for the deconvolution of *in situ* gamma-ray spectrometry measurements on a grid resulting in a map of radionuclide contamination in surface soil.

- Can combine soil sample data with *in situ* gamma-ray spectrometry data
- On a grid of 10m or less, data left convoluted (as per standard practices) can be off by more than a factor of two. Bias is especially large in highly contaminated areas.

### Two types of analysis:

1. For the evaluation of the data when the main objective is to get a best estimate of the distribution of the contaminant. This is useful, for example, during characterization surveys.
2. For the evaluation of the data when the main objective is to find the location and magnitude of potential areas of elevated activity (or "hot spots") that might be hidden in the data. This is useful, for example, for final status surveys after remediation, and provides an alternative to the standard methods of detecting "hot spots".



An example of the use of ISDMAP to get a best estimate of the distribution of the contaminant. Mapping of depleted uranium (DU) in soil using data from 19 *in situ* spectrometric measurements and 8 soil samples.

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### Selected EML Publications

- ▲ M. Reginatto, P. Bailey and P. Shebell, "A Users' Guide for the Computer Program ISDMAP: Analysis and Mapping of *In Situ* Gamma-Ray Spectrometry and Soil Sample Data," USDOE Report EML-610 (2000).
- ▲ P. Shebell, M. Reginatto, M. Monetti, S. Faller and L. Davis, "Mapping of Depleted Uranium With *In Situ* Spectrometry and Soil Samples", Proceedings of the International Symposium on Restoration of Environments with Radioactive Residues, IAEA-SM-359, Arlington, VA (1999). *In*
- ▲ M. Reginatto, P. Shebell and K. M. Miller, "An Alternative Approach to Hot Spot Identification Using *In Situ* Gamma Spectrometry Measurements on a Grid", Health Phys. 74, 481-485 (1998). *In*

