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GIS-Based Fuzzy Logic Mineral Prospectivity Modelling of Surficial Uranium Systems in Namaqualand region, South Africa

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Surficial uranium occurrences are known to occur in the Namaqualand region in the Northern Cape Province. Surficial uranium deposits are usually concentrated in the near-surface, Cenozoic sediments. These surficial uranium occurrences in the Namaqualand region have been classified into fluvial valley, lacustrine-playa, and peat-bog types. These occurrences are found in calcrete, gypsiferous sediments, and diatomaceous earth.

A GIS-based fuzzy logic, a knowledge driven method which uses expert opinion incorporated into objective mathematical functions, was used for prospectivity mapping in the Namaqualand region. Prospective target areas were generated, and follow –up work is planned in the near future for ground truthing.

