



Recepción de resúmenes CCG

Título / Autores / Institución

TÍTULO DE LA PONENCIA

Integración del Análisis Espacial y Patrones Estadísticos para la Exploración de Hidrógeno Natural

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Estilo preferido

ESTILO DE PRESENTACIÓN

- Presentación Oral
- Poster

Categoría del resumen

ÁREA TEMÁTICA

Energías y recursos naturales

LINEAS TEMÁTICAS ERN

Energías renovables y transición energética

Resumen

PALABRAS CLAVE

Hidrogeno, Geológico, Exploración, Estadística, Sensores Remotos

CONTENIDO DEL RESUMEN

Este estudio realiza un análisis estadístico de las ocurrencias globales de hidrógeno natural, identificando patrones clave y estrategias de exploración. Se compilieron 411 datos actualizando bases previas (>10 % en hidrógeno), clasificándolos y comparándolos con bases tectónicas, geofísicas, superficiales y de recursos minerales. Se aplicó detección de anomalías mediante análisis de propiedades de ubicación y el método de z-score modificado, destacando la relación entre altas concentraciones de hidrógeno y límites de provincias geológicas, fallas activas y



mineralizaciones.

Adicionalmente, se llevó a cabo un análisis de teledetección para identificar posibles concentraciones de hidrógeno natural a partir del estudio de círculos de hadas. Mediante Análisis de Componentes Principales (PCA), se diferenció su firma espectral del entorno, observando influencias del agua y la topografía. El análisis en el infrarrojo térmico (TIR) reveló anomalías negativas, aunque su correlación con la humedad varió según la región. Métodos de razón de bandas evidenciaron asociaciones con hierro férrico (Fe^{+3}) y, en menor medida, con alunita-caolinita. También se encontraron correlaciones con índices de vegetación como NDVI y MSI1. En Australia Occidental, bajos valores de K/Th se vincularon con anomalías.

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