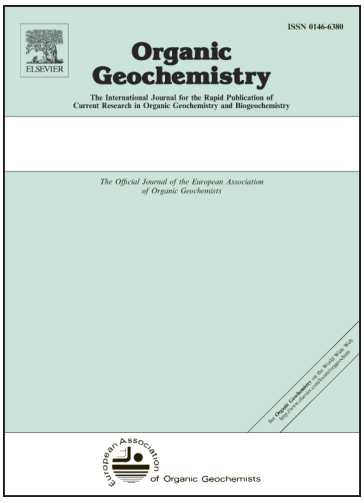

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Characteristics and geochemical significance of heteroatom compounds in terrestrial oils by negative-ion electrospray Fourier transform ion cyclotron resonance mass spectrometry

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Abstract: Terrestrial oils and rock extracts from the Nanpu Sag (Huanghua Depression, Bohai Bay Basin, China) were characterized by negative-ion electrospray ionization (ESI) Fourier transform ion cyclotron resonance mass spectrometry (FT-ICR MS) and gas chromatography-mass spectrometry (GC-MS). Molecular composition of neutral nitrogen and acidic oxygen compounds, mainly by N_1, O_1, and O_2 species were investigated in the samples. Increases in relative abundance and molecular condensation degree of oxygen-containing compounds and a decrease in the carbon number range of N_1 species were observed with the changes of kerogen from type I to III for both the source rock extracts and the relevant oils, which indicates the influence of source input and discrimination potential. We also observed an apparent increase in the condensation degree

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