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Oil Reservoirs Bifurcation Analysis in the Democratic Republic of Congo: Fractal Characterization Approach of Makelekese MS-25 Field

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Abstract : In this paper, the bifurcation analysis of oilfields in the Democratic Republic of Congo is presented in order to enhance petroleum production in an intense tectonic evolution characterized by distinct compressive and extensive phases and the digenetic transformation in the reservoirs during burial geological configuration. The use of porous media in the Makelekese MS-25 field has been established to simulate the boundaries within 3 sedimentary basins open to exploration including the coastal basin with an area of 5992 km², a central basin with an area of 800,000 km², the western branch of the East African Rift in which there are 50,000 km². The fractal characterization of complex hydro-dynamic fractures in oilfields is developed to facilitate the oil production process based on the reservoirs bifurcation model.

Keywords : reservoir bifurcation, fractal characterization, permeability, conductivity, skin effect
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