



CORRELATION BETWEEN MIOCENE GLOBAL CLIMATIC CHANGES (d18O) AND MAGNETIC PROPERTIES, USING NEURO FUZZY LOGIC ANALYSIS

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We have used the hybrid algorithm of neuro fuzzy logic (NFL), to establish a correlation between global climatic changes (benthic foraminiferal d18O data), experimental S-ratios and magnetic susceptibility (χ), in 44 samples of the Colombian stratigraphic well Saltarín 1A (Llanos foreland basin). and S-ratios were linked to global d18O data based on a constant accumulation rate for the stratigraphic interval flanked by the two age constrains available. A good inference (over 64%) is obtained using 4 fuzzy clusters or TKS type relationships. A stronger correlation is perhaps prevented by the likely influence of local and regional tectonic events and climatic changes that could have affected the Colombian Llanos foreland basin during Miocene times. For the Guayabo and León lithologies, it seems that the late diagenesis of the primary magnetic minerals and the assumption of a constant accumulation rate might have a minor influence on these results.