

CHARACTERISATION OF FORMATION HETEROGENEITY USING NON-HIERARCHICAL CLUSTER ANALYSIS

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The characterisation of formations heterogeneities requires a multidisciplinary study of data acquired using a large number of geophysical and geological measurements and a rigorous evaluation of the precision and accuracy of the data. Another essential aspect of the appraisal of any measurement is the quality assessment and quality control of the data. In this work, an interactive Non-Hierarchical Cluster Analysis (INCA) is used to identify heterogeneities in complex geological formations and to evaluate the boundaries they generate. The precision and accuracy of the data from different sources are very important and are considered here by using sample support in the integration of measurements at different scales. We use examples from two wells to show the characterisation obtained with this technique. In addition to the characterisation, a parameter is used to rate the importance of each log curve during the characterisation. It also allows the assessment of how difficult the boundaries are distinguished from each other.