SALT TECTONICS-MECHANICS OF DIAPIRISM

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ABSTRACT

The theories of origin of diapiric structures which have been advanced in the last 100 years are reviewed and discussed in the light of recent information. The importance of tangential pressure in forming salt diapirs is limited to local occurences of thin evaporites. Gravity instability of rock salt supporting heavier sediments is a more universal cause of diapirism on a regional scale. Salt depocenters in a basin may control the distribution of diapirs more than any other factor. The idea of a critical thickness of overburden for salt dome growth is discussed in the light of evidence of "early" growth of salt structures. The role of overburden in evaporite diapirism is reviewed and the idea developed that there is also a critical "strength" of overburden. The relationship of basement faults to the initiation of diapirs is largely hypothetical but research on mechanical models might yield conclusive results.