— University of Mosul —
College of Petroleum & Mining Engineering

Structural geology

Lecture second

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LECTURE CONTENTS

The scope study of structural geology

The scope study of structural geology divided into two branches:

Geometric Analysis: include measurement of shape , size, orientation, location and type of structure and it is relation with other structures. We can say it is interested in answering on (what and where) questions. Genetic Analysis: comprise two type of analysis , (Kinematics analysis and Dynamic analysis),we can say it is interested in answering on (How ,why and When) questions.

Kinematics Analysis: which concerns how rock particles have moved during deformation i.e. It is interested in strain study.(the Greek word kinema means movement). Dynamic Analysis: is the study of forces that cause motion of particles (kinematics). dynamic analysis seeks to reconstruct the orientation and magnitude of the stress field by studying a set of structures, typically faults and fractures. It is interested in stress study.

Applying stress to syrup gives a different result than stressing a cold chocolate bar: the syrup will flow, while the chocolate bar will break. We are still dealing with dynamic analyses, therefore dynamic analysis divided into two parts Rheologic Analysis: part of dynamics related to the flow of rocks under applied stress, The name derives from the Greek word “rheo”, which means “to flow”. Mechanical Analysis: part of dynamics related to the study of how rocks (or sugar) break or fracture under applied stress.