Disjunctive dislocations: normal foult, reverse fault, trust foult, graben, horst

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Disjunctive dislocations are caused by mutual displacement of blocks of rock along the dislocation plane. Normal and reverse (thrust) faults are the most common disjunctive dislocations. The normal fault is a dip-slip fault in which the block above the fault has moved downward relative to the block below. This type of faulting occurs in response to extension and is often observed along oceanic ridge systems. Reverse (thrust) fault is a dip-slip fault in which the upper block, above the fault plane, moves up and over the lower block. This type of faulting is common in areas of compression, such as regions where one plate is being subducted under another as in Japan. When the dip angle is shallow, a reverse fault is often described as a thrust fault. A thrust fault is a type of reverse fault that has a dip of 45 degrees or less. If the angle of the fault plane is lower (often less than 15 degrees from the horizontal) and the displacement of the overlying block is large (often in the kilometer range) the fault is called an overthrust or overthrust fault. Thrust faults develop in sectors of the crust that are experiencing compression. In this regard, a convergent plate boundary is a zone of main reverse and thrust faults. Normal and reverse faults are often grouped in the nature inducing breakage of some parts of the earth crust and formation of block structures. These types of faults are called horsts and grabens. Graben is an elongated block of the earth's crust lying between two faults and displaced downwards relative to the blocks on either side, as in a rift valley. Horst on the contrary is a block of the earth's crust separated by faults from adjacent relatively depressed blocks. Horsts and grabens are formed by the normal faults as well as reverse fault systems. Large scale graben systems characterized by magmatic activity are called rifts (e.g., axial parts of mid ocean ridges, East African, Baikal, Rhine rifts). Thus, the disjunctive dislocations are fairly important in the formation of regional and planetary scale oceanic and continental geological structures.