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Structures of geomaterial deformation and seismicity.

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To forecast the seismic activity variations in any area, one should suppose “predictability” of concerned variations, which means a deterministic component presence in the seismicity variations in time and space. But usually, rough seismic event data distributions in time and space look quite chaotical. To reveal some regularities in the seismic activity variations, it is necessary to apply special data processing methods (alongside with the seismic event source location and magnitude accuracy improvement). A summary of the methods will be presented together with the results of applications to the seismicity data, induced by the oil fields and mineral deposits development. It was found, that the seismic events close to each other in time are related with the tectonic fault structures, so that the structures could be revealed by the group events analysis. Sometimes that structures look as a set of planar faults near parallel to each other. It allows to compare the faults system formation with the deformation localization in a set of shear bands or compression bands in granulated materials. One of the most interesting features of the shear band formation (obtained experimentally) is that the rate of spreading localization has the same order as the rate of the seismic event hypocenter migrations along tectonic structures.