O6-2	A COMPARISON OF TIME-DEPENDENT AND TIME-INDEPENDENT MODELS FOR WESTERN ANATOLIAN NEOTECTONIC REGIME EVIDENCES

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Western Anatolian platform has been subjected to different events that created the neotectonic picture of the region. One of them is the graben systems. The graben systems in Western Anatolia has been generated the graben groups. These can be modelled using the geophysical methods. Graben is simply a result of faulting. Seismologically faulting is considered as a finitely dislocation, and generated by earthquakes.

Moment tensor is a quantity that it exactly defines the seismic source. It is estimated from observed seismogram. For this estimation, it is used two approximation being one the constrained moment tensor estimation and the other unconstrained moment tensor estimation. The constrained inversion assumes the moment tensor to be either a double couple or a purely deviatoric part. This is a mostly used approximation. As for the second one, it is rarely used. The moment tensor estimated in terms of second approximation is given the most general moment tensor definition. However, this condition is a theoretical reality. Because, a moment tensor is the general concept, describing a variety of seismic sources models. Thus, this estimation process obtains it obtained the general moment tensor as sum of the double-couple moment tensor and the nondouble-couple moment tensor. It has the properties characterised the physical seismic source. For forward solution, the moment tensor can be calculated. For this done, mathematically an earthquake may be defined as superposition of elementary moment tensors as well as a single moment tensor.

Generally, a moment tensor is composed of an isotropic part, and a deviatoric part. The isotropic part represents the volume change. As for the deviatoric part, it describes the dislocation, i.e. the deviatoric part is a non-volumetric component. The deviatoric part can be represented as sum of a double-couple part, and a compensated linear vector dipole part. By this relation, it is determined the contribution percents of equivalent body forces generated seismic source, and the dominant force system describes the properties of source.

The moment tensor can be defined as either time-dependent or time-independent. The results of time-independent modelling for the graben complexes in Western Anatolian region have been displayed that these kinds of structures are not purely tectonic generation. Because, such a graben system has been described the nondouble-couple source mechanism. But, the calculated complex moment tensor is time-independent. This property can be considered as deficiency for modelling.

In this case, the calculating of time dependent moment tensors will provide a number of new knowledge.

An event occurred in the tectonic system behaves within an evident geometry described the presence system, i.e. the form of this behaviour is orientated by above-mentioned geometry. In this sense, to define the geometrical effect is necessary. If the geometrical effect is assumed as a time-dependent exponential function, the graben complex has shown a quicker trend towards nondouble-couple. The system has displayed which is under the effect of equivalent body forces other than the tectonic component. In this study, time-dependent and time-independent seismological modes designed for graben groups in Western Anatolian will be compared.