ID: Type: **Poster**

T2.3-P13. Modeling of earthquake source physics as a tool of most real method for earthquake modeling

Seismic waves can be represented as elastic perturbations propagating within a medium, originated by a transient disequilibrium in the stress field. The properties of seismic waves are ruled by the physics of elastic bodies, and are studied using the formalisms of elastodynamic theory. Solving the equation of motion helps us to reach a system of modeling including the physics of the source where the modeling can be updated with the most real conditions of the faulting. Here some analytical and numerical methods are combined presenting the physics of the source where it is modeled as a double-couple. The modeling is performed in all 1D, 2D and 3D dimensions covering all properties of far point source, near extended source and full path effects of the propagating waves from source toward the recording site. Some real cases are simulated and results are presented comparing the synthetic signals with real ones. In this research a hybrid 2D (Modal Summation–Finite Difference) and a hybrid 3D (Modal Summation–Ray tracing–WKBJ approximation) and finally a hybrid modeling combining modal summation–finite difference and Green function are tested and results are presented for Bam 2003 and Tehran 2009 critical earthquakes inside Iran active zone.

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Track Classification: 2. Events and their characterization