Traditional view about seismic events as exclusively shear slip phenomena has changed during recent decades. Advanced instrumentation and monitoring provide data which indicate events not matched by a simple double couple (DC). While earthquakes, in particular the strong events, are commonly assumed as shear slips, in foci of events induced by industrial activities like mining or hydro-fracturing in oil/gas or geothermal wells physically a more complex mechanism may be expected. Injuring the rock mass by mine works concentrates the ambient stress and the cavities tend to collapse. Contrary to that, hydro-fracturing is aimed to break the rock around the well by tensile cracks to increase reservoir permeability. The mechanism of the induced micro-earthquakes is an important discrimination instrument of the mode of the rock-mass fracturing, provided that the model contains all the modes anticipated. Traditional moment tensor (MT) approach need not be necessarily the best one, as it is a rather general description of the source mechanics, containing non-physical mechanisms. It seems advantageous to constrain the model to eliminate them a priori. A simple generalization of a shear-slip by adding an off-plane slip component may be a useful model, as it contains both the shear and tensile/implosion modes of fracturing. We designed a two-step grid search inversion for the parameters of the shear-tensile/implosion (STI) model, allowing construction of confidence zones of both the components. On several examples of induced micro-earthquakes, we demonstrate advantage of the STI model in comparison to the traditional MT approach consisting in elimination of un-physical mechanisms.