During broadband modelling of selected events from the aftershock sequence of the l'Aquila earthquake using 1-D model of media, we observe interesting difference between model and real particle polarization on high frequencies. There are two basic types of these polarization disorders. Polarization of particle motion keeps its linear form, but changes its direction or linear polarization changes its linear form to circle polarization. It offers the explanation that these disorders of polarization occur due to the 3D heterogeneities in the crust. In this work, we analyze polarization of published synthetic seismograms modeled with random 3D heterogenitites. It has been shown that the biggest disorders occur in directions in which parcticle movement heads toward the source, and that we can find examples, which qualitatively explain observed polarization disorders.