

Static and Dynamic Displacement with the Discrete Wave-number Method

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In this study, we discussed about horizontal wave-number, especially, the effect of VTSE (a Vertically Traveling plane S wave Element) corresponding to the wave of horizontal wave-number to be zero. We assumed that a finite rectangular fault buried in a half space. Seismograms were synthesized with the Discrete Wave-number Method. We compared seismograms with exact VTSE to no VTSE. The absolute value of the difference in static displacement is constant for all the station on the surface, while observed waveforms at distant stations are largely distorted because of relatively small amplitude of seismograms there. In addition, we found that the deeper the source, the larger the effect of VTSE becomes.