# Influence of near-surface strongly anisotropic medium on P-to-S wave conversion

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In the fields of earthquake disaster prevention and energy resource exploration, understanding the properties of seismic anisotropy is important for obtaining various information about subsurface, for example, its structure, regional stress field and selective orientation of crack opening direction. In some cases, like near surface and reservoir rocks, formations are estimated to be strongly anisotropic for elastic wave propagation. To extract anisotropic information from seismic exploration data, many researches have conducted elastic anisotropy studies. However, most of these studies are based on the assumption of weakly anisotropic media (Thomsen, 1986). Our previous studies showed that strong anisotropic media in the subsurface significantly influence the seismic waveforms especially on the PS converted waves. In the present study, we apply the reverse time migration (RTM) to the PS converted waves to determine the depth of anisotropic layer. To extract PS converted waves from observed data, we also develop a novel wave separation method. We demonstrate the effectiveness of our method using a numerical experiment. Our numerical result shows that our method can image layer boundary between isotropic and anisotropic layers which generates strong PS converted waves.

Keywords: Seismic anisotropy, PS converted waves

 