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## THE SUPPRESSION OF SURFACE MULTIPLES ON SEISMIC RECORDS\*

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### ABSTRACT



A new approach is presented for the suppression of multiples reflected at the surface of a horizontally layered fluid or elastic medium, recorded at non-zero offsets from the source. The scheme used is to extract the effect of the free surface in the frequency-wavenumber domain and then to replace this surface by a non-reflecting boundary. The multiple suppression operator requires a detailed knowledge of the source time function and the elastic properties of the medium between the source and the surface.

For a stratified fluid or a liquid layer overlying a stratified elastic medium, complete multiple suppression can be achieved with noise free data. If only the vertical component is available for an elastic medium an approximate approach may be used which removes most of the multiple energy. Good results may be achieved with this multiple suppression scheme in the presence of noise. The method is designed to be used before records are stacked in a CDP gather.

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