

# Mission-Oriented Seismic Research Program

M-OSRP has provided the most capable, effective methods, algorithms and codes for eliminating free surface multiples and for attenuating internal multiples. A new and first migration method that is equally effective for all recorded frequencies at the target and reservoir is being developed and delivered to sponsor companies.

**Overview:** M-OSRP multiple removal algorithms stand alone because they require no subsurface information. All major service companies provide M-OSRP delivered algorithms as a standard service for on-shore and off-shore plays.

**Issues:** Free surface and internal multiples can adversely impact E&P effectiveness and hinder successful exploration, appraisal and development drill placement.

**Current Work:** M-OSRP is developing the next generation of internal multiple capability that will not suffer the problems and limitations of the current delivery. That next level of capability is required to effectively remove a multiple interfering with a primary without damaging the primary. That will allow for more effective and reliable exploration and production drilling decisions.

Providing that next level of effective prediction, without subsurface information, will require returning to the inverse scattering series to locate the terms that provide the exact amplitude and phase of all orders of internal multiples, at all offsets.



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