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a New Paradigm for the Interactive Analysis of Waveform Data

Motivation for a radical change in approach to interactive analysis suffers from the QWERTY syndrome, which shuns the retraining burden associated with redesigning repetitive manual actions of high acuity. Perhaps for this reason, the IDC waveform software re-engineering project does not envisage such change. All software for the interactive analysis of individual seismic events (as opposed to the repeating events characteristic of exploration seismology) presents data in a similar way to the paper seismograms of a hundred years ago, and in some ways is inferior (for example in the absence of a hand lens equivalent). A major part of the analyst's work is correcting misassociated arrivals, yet multiple events and their resulting signals are never presented in a composite visual. The geometric context of multiple seismograms distributed over the earth's surface and their relation to the supposed hypocentre is also missing. Indeed, the role of maps is rudimentary, despite the use of stereographic projections for earthquake focal mechanisms dating back to the 1950s. Proposals for redressing such shortcomings are presented, with the aim of increasing analyst throughput and reducing analyst dependence upon a vast body of personally acquired anecdotal experience, much of which could be displayed automatically as needed.

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