

IASPEI Seismic Format

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IASPEI Seismic Format (ISF) is a new standard for exchanging parametric seismic data. In the past, storage and transmission were sufficiently expensive that conciseness was essential. In contrast, ISF takes it as given that bytes are cheap on the scale required for parametric data and sacrifices conciseness to be both easily parsed and easily scanned.

To overcome the hurdle of sufficiently widespread initial use, ISF is defined as an extension of IMS1.0 (also been known as GSE2.1), in which format bulletins of the ISC, the US NEIC, the prototype IDC, and various CTBT NDCs are already available. Any program written to parse ISF will already be useful with a number of important bulletins. In addition, an ISF formatting program will be useful for writing bulletins for contribution to NDCs, confidence building measures, and other efforts related to monitoring of the CTBT, as well as the ISC. Software to use the new format also encourages widespread use, and SEISAN is being modified to parse and format ISF Bulletins.

ISF extends IMS1.0 by including further hypocentral parameters and phase measurements important in seismotectonics, seismic hazard, and earthquake physics. Formats are rigorously defined to allow reliable parsing. To make ISF compatible with IMS1.0 parsers, extensions are formatted either as IMS1.0 comments within an existing block, or as new blocks within an existing datatype. ISF allows further extension through the additions to lists of hypocentral parameters and reading measurements. The most important new block is phase information, which provides additional data for arrivals in the phase block. The phase information sub-block includes a station's network affiliation, the channel and filter used to make measurements, and uncertainties of measurements in the phase block.