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(54) Title: STRATIGRAPHIC SEISMIC TRACES TO INTERPRET GEOLOGICAL FAULTS

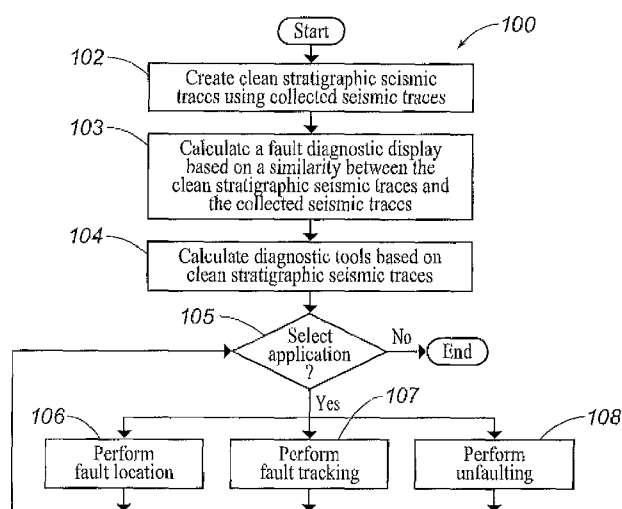


FIG. 1

(57) Abstract: Systems and methods for constructing clean stratigraphic seismic traces to enhance interpretation of geological faults using diagnostic displays, diagnostic tools, and fault quality validation techniques by selecting a first seismic trace beyond a seismic trace gap from a plurality of seismic traces collected parallel to a side of a seed fault; calculating cross-correlation coefficients for the selected seismic trace with a next seismic trace for predetermined number of vertical shifts up and down; applying a parabolic curve fit to each cross-correlation coefficient to obtain a sub-sample shift between the selected seismic trace and the next seismic trace, and a score; accumulating the sub-sample shift(s) between the selected seismic trace and the next seismic trace; selecting the next seismic trace beyond the seismic trace gap from the plurality of collected seismic traces; and repeating until the score is not greater than a predetermined threshold.