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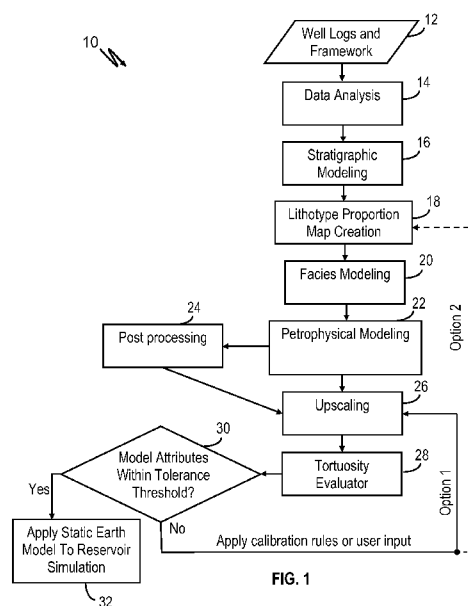
(54) Title: **STATIC EARTH MODEL CALIBRATION METHODS AND SYSTEMS**

FIG. 1

(57) Abstract: At least some of the disclosed systems and methods obtain a static earth model having a three-dimensional grid with multiple cells. Further, at least some of the disclosed systems and methods determine a plurality of geobodies for the static earth model, each geobody comprising a plurality of connected cells. Further, at least some of the disclosed systems and methods compute one or more tortuosity values for at least one of the plurality of geobodies. Further, at least some of the disclosed systems and methods calibrate the static earth model based on the one or more computed tortuosity values. Further, at least some of the disclosed systems and methods use the calibrated static earth model as input to a flow simulator.