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(71) Applicant: **BP CORPORATION NORTH AMERICA INC.** [US/US]; 501 Westlake Park Boulevard, Houston, Texas 77079 (US).

(72) Inventor: **ZHANG, Jingfeng**; c/o BP Legal Patents and Technology, 501 Westlake Park Boulevard, Houston, Texas 77079 (US).

(74) Agent: **HOOPER, James A.** et al.; Conley Rose, P.C., 777 North Eldridge Parkway, suite 600, Houston, Texas 77079 (US).

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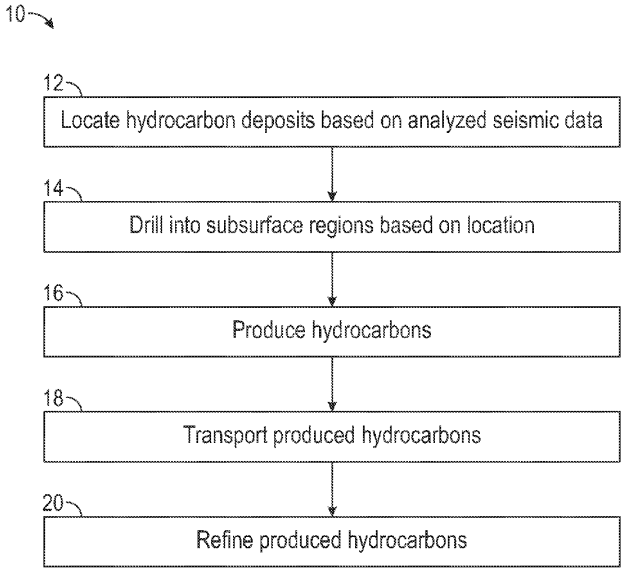


FIG. 1

(57) Abstract: A method for stochastic seismic data inversion by enforcing the low frequency model includes generating at least one earth model based at least in part on input seismic data of a subsurface region and an input low frequency model of the subsurface region, generating synthetic seismic data based on the at least one earth model, iteratively updating, using the generated synthetic seismic data, a value of the at least one earth model to generate at least one updated earth model, and generating at least one final earth model from the updated earth model matching the input seismic data, wherein a low pass filtered version of the at least one final earth model matches the input low frequency model.

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