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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR PREDICTING FLUID FLOW CHARACTERISTICS WITHIN FRACTURED SUB-SURFACE RESERVOIRS

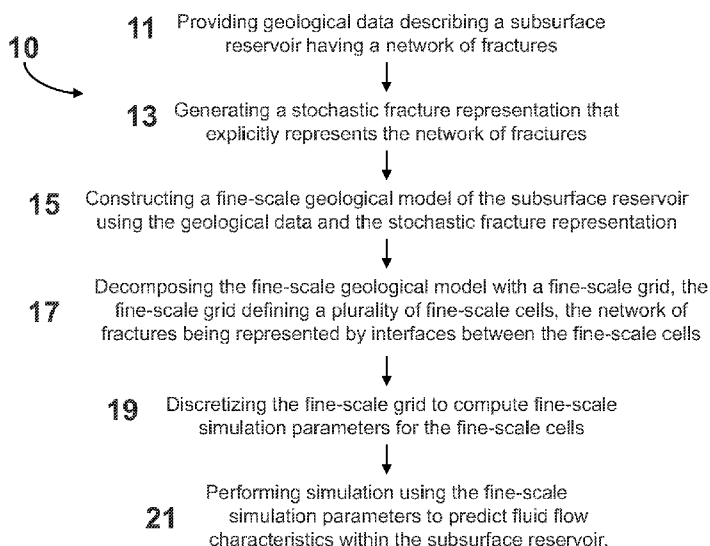


FIG. 1

(57) Abstract: A system and method having application notably towards predicting fluid flow characteristics within fractured subsurface reservoirs. The system and method include steps of reservoir characterization, gridding, discretization, and simulation of geologically realistic models describing the fractured subsurface reservoirs. A stochastic fracture representation that explicitly represents a network of fractures within a subsurface reservoir is constructed and used to build a fine-scale geological model. The model is then gridded such that the network of fractures is represented by interfaces between the fine-scale cells. The model is the discretized and simulated. Simulation can be on a fine-scale or on an upscaled course-scale to produce efficient and reliable prediction of fluid flow characteristics within the subsurface reservoir.

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<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
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According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) IPC G01F, G06F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean utility models and applications for utility models Japanese utility models and applications for utility models		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKOMPASS(KIPO internal), Google Scholar & keywords: finite-volume discretization, fine-scale grid.		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	IVAN LUNATI and PATRICK JENNY, Multiscale finite-volume method for density-driven flow in porous media, Computational Geosciences, September 2008, Volume 12, Number 3, pp. 337-350, ISSN 1420-0597 (Print) 1573-1499 (Online). See sec. 4 Pressure approximation.	1-11, 15
A		12-14
Y	GILBERT ACCARY and ISABELLE RASPO, A 3D finite volume method for the prediction of a supercritical fluid buoyant flow in a differentially heated cavity, December 2006, Volume 35, Issue 1-, pp. 1316-1331. See sec. 4 Pressure approximation.	1-11, 15
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A		12-14
Y	MASOUD NIKRAVESH, Soft computing-based computational intelligent for reservoir characterization, Intelligence Computing in the Petroleum Industry, January 2004, Volume 26, Issue 1, pp. 19-38. See sec. 1.1. The role of soft computing techniques.	4
A		1-3, 5-15
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
None			