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(54) Title: COMPUTERIZED METHOD FOR THE ESTIMATION OF A VALUE FOR AT LEAST A PARAMETER OF A HYDROCARBON-PRODUCING REGION, FOR PLANNING THE OPERATION AND OPERATING THE REGION

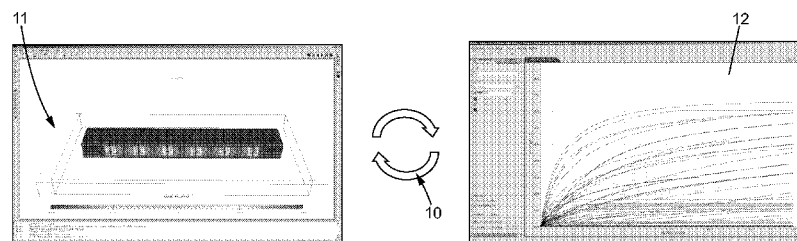


FIG. 3

(57) Abstract: A method for the estimation of a value for an investigated parameter of a hydrocarbon-producing region, comprising : a) using a design of experiments tool (12) to determine a ruling law for a match parameter as a function of descriptive parameters, b) conducting a set of experiments using a simulation tool (11) wherein, for each experiment, the region is geometrically and physically modelled, c) determining (110) suitable sets of values for descriptive parameters from the ruling law, d) determining (111) a value for the investigated parameter from most likely sets of values.

INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER

INV. G01V99/00

ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G01V E21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7 386 431 B2 (SIEBRITS EDUARD [US] ET AL) 10 June 2008 (2008-06-10) column 10, line 5 - column 11, line 35 figure 13 -----	1-15
X A	US 2011/015907 A1 (CRAWFORD BRIAN R [US] ET AL) 20 January 2011 (2011-01-20) page 4, paragraph 0032 page 5, paragraph 0034 -----	1-3,8,9, 15 4-7, 10-14
A	US 2008/164021 A1 (DYKSTRA JASON D [US]) 10 July 2008 (2008-07-10) page 2, paragraphs 0012, 0013 -----	1-15
A	US 2010/032156 A1 (PETTY SUSAN [US] ET AL) 11 February 2010 (2010-02-11) -----	1-15
A	US 2009/319307 A1 (CARLSON FRANCIS M [US]) 24 December 2009 (2009-12-24) -----	1-15



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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
US 7386431	B2	10-06-2008	CA 2541459 A1 30-09-2006 EA 200600517 A1 27-10-2006 US 2006224370 A1 05-10-2006
US 2011015907	A1	20-01-2011	NONE
US 2008164021	A1	10-07-2008	AU 2007343180 A1 17-07-2008 CA 2674016 A1 17-07-2008 US 2008164021 A1 10-07-2008 WO 2008084194 A1 17-07-2008
US 2010032156	A1	11-02-2010	AU 2009279407 A1 11-02-2010 EP 2334904 A1 22-06-2011 US 2010032156 A1 11-02-2010 WO 2010017557 A1 11-02-2010
US 2009319307	A1	24-12-2009	AU 2005332039 A1 30-11-2006 CA 2649504 A1 30-11-2006 EP 1896827 A1 12-03-2008 US 2009319307 A1 24-12-2009 WO 2006127000 A1 30-11-2006