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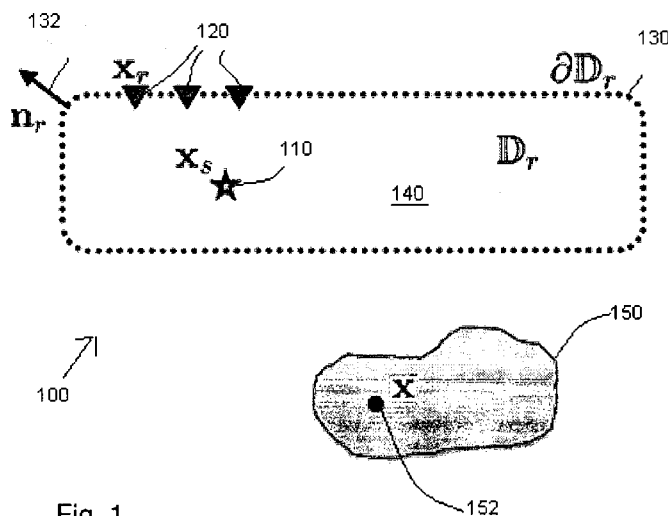


Fig. 1

(57) Abstract: Methods for wavefield extrapolation using measurements of a wavefield quantity and a component of the gradient of the wavefield quantity are disclosed. The methods use "exact" representations of scattering reciprocity. The methods can yield "exact", nonlinear, "true-amplitude" receiver wavefields that are beyond the receiver measurement boundary. Methods of evaluating/validating the extrapolated data are also disclosed. Some methods may also evaluate the accuracy of models for the areas where data are extrapolated or measured. These methods can be used in any industries involving imaging, such as geophysical/seismic exploration, bio-medical imaging, non-destructive remote sensing, acoustic space architecture, design and engineering.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2012/000972**A. CLASSIFICATION OF SUBJECT MATTER***G01V 1/28(2006.01)i, G01N 29/26(2006.01)i, A61B 8/00(2006.01)i, G01V 1/24(2006.01)i*

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 1/28; G01V 1/38; G01V 1/30; G01V 1/40; G01V 1/00

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)

eKOMPASS(KIPO internal) & Keywords: extrapolating, wavefield, model, gradient, boundary, measurement, volume, normal and similar terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7254091 B1 (GUNNING, J. S. et al.) 07 August 2007 See the whole document.	1-23
A	US 7872942 B2 (SöLLNER, W.) 18 January 2011 See the whole document.	1-23
A	US 2009-0109794 A1 (SINHA, B. K.) 30 April 2009 See the whole document.	1-23
A	US 2010-0110830 A1 (THOMSON, C.) 06 May 2010 See the whole document.	1-23

☐ Further documents are listed in the continuation of Box C.☒ 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

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		EP 2177933 A2	21.04.2010
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