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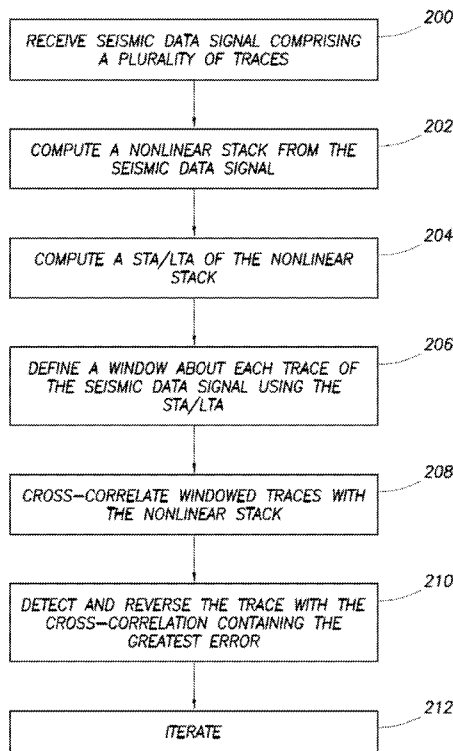
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[Continued on next page]

(54) Title: DETECTING AND CORRECTING CHANGES IN SIGNAL POLARITY FOR SEISMIC DATA PROCESSING



(57) Abstract: Utilizing the phase component of a moment tensor for a seismic data signal, isolated from the amplitude component, by automatically detecting polarity changes that occur over a focal mechanism of the seismic event, and correcting for such polarity reversals. Transforming seismic (including micro-seismic) signals as recorded by one or more seismic detectors to enhance detection of arrivals. The transforms enable the generation of an image, or map, representative of the likelihood that there was a source of seismic energy occurring at a given point in time at a particular point in time.

FIG.2

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- (81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,

ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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A. CLASSIFICATION OF SUBJECT MATTER**G01V 1/40(2006.01)i, G01V 1/28(2006.01)i, G06F 19/00(2011.01)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 1/40; G01V 1/30; G01V 1/38; G01V 1/32; G06F 19/00; G01V 1/28

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) & keywords: seismic, stack, polarity reversal, detection function

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7525873 B1 (BUSH et al.) 28 April 2009 See abstract, column 7 line 23-column 12 line 45, claim 2, and figures 1-6.	1-16
A	WO 01-84462 A1 (CHROMA GRAPHICS, INC. et al.) 08 November 2001 See abstract, pages 3-5, claims 1-3, and figures 1-5.	1-16
A	US 2012-0134234 A1 (ROBERTS et al.) 31 May 2012 See abstract, claims 1-21, and figures 13-16B.	1-16
A	US 2003-0048696 A1 (DUREN, RICHARD E.) 13 March 2003 See abstract, paragraphs [0048]-[0107], claims 1-17, and figures 3-6.	1-16
A	US 2009-0316527 A1 (STEWART et al.) 24 December 2009 See abstract, paragraphs [0031]-[0042], claims 1-13, and figures 1-3D.	1-16

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

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"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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Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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