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- (26) 公布语言: 中文
- (30) 优先权:
201110209521.4 2011 年 7 月 26 日 (26.07.2011) CN
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(81) 指定国 (除另有指明, 要求每一种可提供的国家保护): 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, KM, 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,

[见续页]

(54) Title: DEVICE AND METHOD FOR ENHANCING ACCURACY OF RECOGNIZING FETUS HEART RATE ACCELERATION DATA

(54) 发明名称: 一种提高胎心率数据加速识别准确性的装置和方法

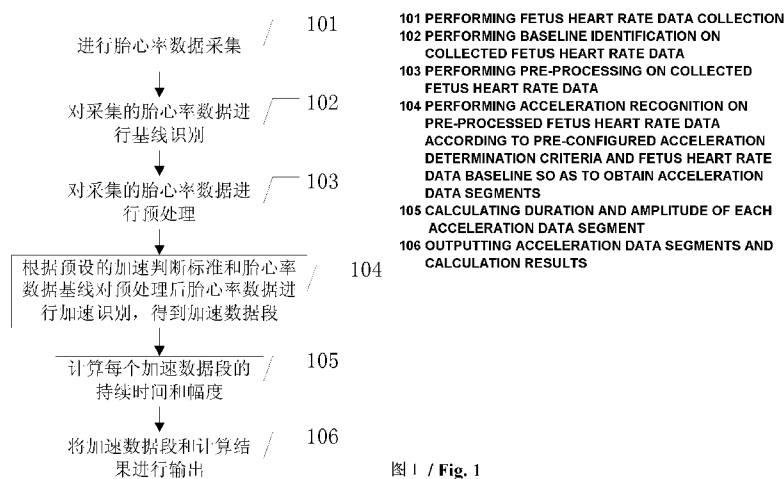


图 1 / Fig. 1

(57) Abstract: A device and method for enhancing the accuracy of recognizing fetus heart rate acceleration data. The method comprises: collecting fetus heart rate data in a pre-configured period so as to obtain a fetus heart rate data sequence, H(n) (101); performing baseline identification on the fetus heart rate sequence, H(n), to obtain a fetus heart rate baseline data sequence, B(n) (102); pre-processing the fetus heart rate data sequence, H(n), to obtain a pre-processed fetus heart rate data sequence, C(n) (103); performing acceleration recognition on the pre-processed fetus heart rate data sequence, C(n), according to pre-configured acceleration determination criteria and the fetus heart rate baseline data sequence, B(n), to obtain the acceleration data segments (104); calculating the acceleration attribute value for each of the acceleration data segment (105), and outputting each acceleration data segment and the acceleration attribute value calculation result thereof (106). The technical solution provided by the present invention effectively distinguishes the variations between the accelerations and the baseline, accurately recognizes each acceleration in continuous accelerations, and avoids the situations of detected number of fetus heart rate data accelerations being lower than actuality or being mistaken due to current methods, thereby enhancing the accuracy in recognizing fetus heart rate curve.

(57) 摘要:

[见续页]

SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW。

(84) **指定国** (除另有指明, 要求每一种可提供的地区保护): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)。

本国际公布:

- 包括国际检索报告(条约第 21 条(3))。
- 在修改权利要求的期限届满之前进行, 在收到该修改后将重新公布(细则 48.2(h))。
- 包括关于请求恢复一项或多项优先权要求的信息(细则 26 之二.3 和 48.2(b)(vii))。

(88) **国际检索报告公布日期:** 2013 年 3 月 14 日

一种提高胎心率数据加速识别准确性的装置及方法。该方法包括: 预订时长内进行胎心率数据的采集, 得到胎心率数据序列 $H(n)$ (101); 对所述的胎心率序列 $H(n)$ 进行基线识别, 得到胎心率基线数据序列 $B(n)$ (102); 对所述的胎心率数据序列 $H(n)$ 进行预处理, 得到预处理后的胎心率数据序列 $C(n)$ (103); 根据预设的加速判断标准和所述的胎心率基线数据序列 $B(n)$ 对预处理后的胎心率数据序列 $C(n)$ 进行加速识别, 得到加速数据段(104); 计算每个所述的加速数据段的加速属性值(105), 将每个所述的加速数据段及其加速属性值的计算结果进行输出(106)。本发明所提供的技术方案可有效地区分加速和基线变异部分, 准确地识别出连续加速中的每个加速, 避免了现有方法容易造成胎心率数据加速检测偏少或误检的情况, 从而提高胎心率曲线识别的准确性。

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2012/081934

A. CLASSIFICATION OF SUBJECT MATTER

See the extra sheet

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)

IPC: A61B 5

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)

VEN, CPRSABS, CNTXT, TWABS, TWTXT, CNKI: EDAN INSTRUMENTS, INC.; RAO, Jian; CHEN, Dewei; ZENG, Yonghua; CHEN, Wusun; fetal heart rate, embryocardia, heart rate, cardiac rhythm, fetal heart, abnormal, tachycardia, fetal, fetus, foetal, foetus, baseline, base, line, heart, rate, HR, FHR, accelerat+, decelerat+, variability

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009054797 A1 (MLLER, L.A. et al.), 26 February 2009 (26.02.2009), the whole document	1-15
A	CN 102048558 A (EDAN INSTRUMENTS, INC.), 11 May 2011 (11.05.2011), the whole document	1-15
A	CN 1323012 A (QUAN, Jiche), 21 November 2001 (21.11.2001), the whole document	1-15
A	CN 102048534 A (EDAN INSTRUMENTS, INC.), 11 May 2011 (11.05.2011), the whole document	1-15
PA	CN 102210586 A (TAIAN MEDI MEDICAL ELECTRONICS CO., LTD.), 12 October 2011 (12.10.2011), the whole document	1-15

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

☒ See patent family annex.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search 13 November 2012 (13.11.2012)	Date of mailing of the international search report 10 January 2013 (10.01.2013)
Name and mailing address of the ISA/CN: State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No.: (86-10) 62019451	Authorized officer SHEN, Yanyan Telephone No.: (86-10) 62085634

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2012/081934**C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PA	CN 102302363 A (EDAN INSTRUMENTS, INC.), 04 January 2012 (04.01.2012), the whole document	1-15
A	GB 2471667 A (MONICA HEALTHCARE LTD.), 12 January 2011 (12.01.2011), the whole document	1-15
A	US 2004133115 A1 (HAMILTON, E.F. et al.), 08 July 2004 (08.07.2004), the whole document	1-15
A	US 2006229518 A1 (PHYSICAL LOGIC AG), 12 October 2006 (12.10.2006), the whole document	1-15
A	CN 1942135 A (NEOVENTA MEDICAL AB), 04 April 2007 (04.04.2007), the whole document	1-15

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2012/081934

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
US 2009054797 A1	26.02.2009	None	
CN 102048558 A	11.05.2011	CN 102048558 B	23.05.2012
CN 1323012 A	21.11.2001	US 6522916 B1	18.02.2003
		KR 20010105460 A	29.11.2001
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CN 102210586 A	12.10.2011	None	
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		EP 1722678 A1	22.11.2006
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		US 2008045849 A1	21.02.2008
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		ES 2299008 T3	16.05.2008
		DE 602005004604 T2	29.01.2009
		CN 100453035 C	21.01.2009

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2012/081934

CLASSIFICATION OF SUBJECT MATTER:

A61B 5/024 (2006.01) i

A61B 5/0444 (2006.01) i

A61B 5/02 (2006.01) i

国际检索报告

国际申请号

PCT/CN2012/081934

A. 主题的分类

参见附加页

按照国际专利分类(IPC)或者同时按照国家分类和 IPC 两种分类

B. 检索领域

检索的最低限度文献(标明分类系统和分类号)

IPC: A61B 5

包含在检索领域中的除最低限度文献以外的检索文献

在国际检索时查阅的电子数据库(数据库的名称, 和使用的检索词(如使用))

VEN,CPRSABS,CNTEXT,TWABS,TWTEXT,CNKI

深圳市理邦精密仪器股份有限公司,饶箭,陈德伟,曾永华,陈吴笋,胎心率,胎儿心率,胎心律,胎儿心律,FHR,胎儿,HR,心率,心律,胎心,基线,胎,变异,异常,加速,过速

fetal,fetus,foetal,foetus,baseline,base,line,heart,rate,HR,FHR,accelerat+,decelerat+,variability

C. 相关文件

类 型*	引用文件, 必要时, 指明相关段落	相关的权利要求
A	US 2009054797 A1 (MILLER L A 等) 26.2 月 2009 (26.02.2009) 全文	1-15
A	CN 102048558 A (深圳理邦精密仪器股份有限公司) 11.5 月 2011 (11.05.2011) 全文	1-15
A	CN 1323012 A (权基澈) 21.11 月 2001 (21.11.2001) 全文	1-15
A	CN 102048534 A (深圳理邦精密仪器股份有限公司) 11.5 月 2011 (11.05.2011) 全文	1-15
PA	CN 102210586 A (泰安市迈迪医疗电子有限公司) 12.10 月 2011 (12.10.2011)	1-15

☒ 其余文件在 C 栏的续页中列出。

☒ 见同族专利附件。

* 引用文件的具体类型:

“A” 认为不特别相关的表示了现有技术一般状态的文件

“E” 在国际申请日的当天或之后公布的在先申请或专利

“L” 可能对优先权要求构成怀疑的文件, 或为确定另一篇引用文件的公布日而引用的或者因其他特殊理由而引用的文件(如具体说明的)

“O” 涉及口头公开、使用、展览或其他方式公开的文件

“P” 公布日先于国际申请日但迟于所要求的优先权日的文件

“T” 在申请日或优先权日之后公布, 与申请不相抵触, 但为了理解发明之理论或原理的在后文件

“X” 特别相关的文件, 单独考虑该文件, 认定要求保护的发明不是新颖的或不具有创造性

“Y” 特别相关的文件, 当该文件与另一篇或者多篇该类文件结合并且这种结合对于本领域技术人员为显而易见时, 要求保护的发明不具有创造性

“&” 同族专利的文件

国际检索实际完成的日期

13.11 月 2012 (13.11.2012)

国际检索报告邮寄日期

10.1 月 2013 (10.01.2013)

ISA/CN 的名称和邮寄地址:

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中国北京市海淀区蓟门桥西土城路 6 号 100088

传真号: (86-10)62019451

受权官员

沈研研

电话号码: (86-10) 62085634

C(续). 相关文件		
类 型	引用文件, 必要时, 指明相关段落	相关的权利要求
PA	CN 102302363 A (深圳市理邦精密仪器股份有限公司) 04.1 月 2012 (04.01.2012) 全文	1-15
A	GB 2471667 A (MONICA HEALTHCARE LTD) 12.1 月 2011 (12.01.2011) 全文	1-15
A	US 2004133115 A1 (HAMILTON E F 等) 08.7 月 2004 (08.07.2004) 全文	1-15
A	US 2006229518 A1 (PHYSICAL LOGIC AG) 12.10 月 2006 (12.10.2006) 全文	1-15
A	CN 1942135 A (诺文塔医药股份公司) 04.4 月 2007 (04.04.2007) 全文	1-15

国际检索报告

关于同族专利的信息

国际申请号

PCT/CN2012/081934

检索报告中引用的 专利文件	公布日期	同族专利	公布日期
US2009054797A1	26.02.2009	无	
CN102048558A	11.05.2011	CN102048558B	23.05.2012
CN1323012A	21.11.2001	US6522916B1	18.02.2003
		KR20010105460A	29.11.2001
CN102048534A	11.05.2011	无	
CN102210586A	12.10.2011	无	
CN102302363A	04.01.2012	无	
GB2471667A	12.01.2011	GB2471667B	09.11.2011
		GB2482758A	15.02.2012
		GB2482758B	04.04.2012
		WO2011004147A2	13.01.2011
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		WO2005079666A1	01.09.2005
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		ES2299008T3	16.05.2008
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		CN100453035C	21.01.2009

主题的分类:

A61B 5/024 (2006.01) i

A61B 5/0444 (2006.01) i

A61B 5/02 (2006.01) i