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(54) Title: PHYSICS INFORMED LEARNING MACHINE

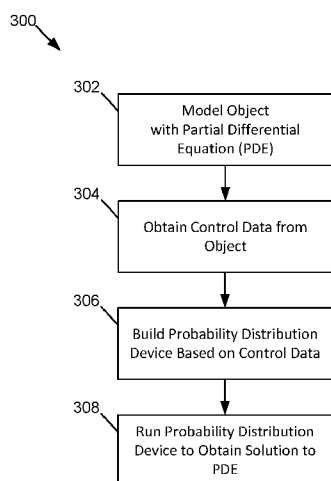


FIG. 3

(57) Abstract: A method for analyzing an object includes modeling the object with a differential equation, such as a linear partial differential equation (PDE), and sampling data associated with the differential equation. The method uses a probability distribution device to obtain the solution to the differential equation. The method eliminates use of discretization of the differential equation.



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A. CLASSIFICATION OF SUBJECT MATTER**G06N 99/00(2010.01)i**

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

B. FIELDS SEARCHEDMinimum documentation searched (classification system followed by classification symbols)
G06N 99/00; G01F 25/00; G06F 15/00; G01N 3/00; G06F 17/18; H04L 25/06; G06N 5/02Documentation 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 modelsElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: differential equation, probability distribution, density, constructing, adjusting, sensor, data, 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.
X Y A	US 2003-0187621 A1 (ALEXEI V. NIKITIN et al.) 02 October 2003 See paragraphs [0068]-[0069] and [0093]; and claims 1-4, 14, 24, and 33.	21-22, 26-28, 34-35 23-25, 29-33, 36-39 1-20, 40
Y	US 2010-0211357 A1 (KE BETTY LI et al.) 19 August 2010 See paragraphs [0017]-[0018] and claim 1.	23-25, 37-38
Y	US 6,772,082 B2 (ROBERT ANTON BERNARD VAN DER GEEST et al.) 03 August 2004 See claims 1-3.	29-33, 39
Y	US 2007-0171998 A1 (VINCENT MARK HIETALA et al.) 26 July 2007 See paragraphs [0100]-[0101] and claim 78.	32-33, 36
A	EP 1562033 B1 (ABB RESEARCH LTD.) 06 August 2006 See paragraphs [0018]-[0023] and figure 1.	1-40

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

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