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## (54) Title: METHODS AND SYSTEMS FOR MEASURING A SIMILARITY BETWEEN TWO GRAPHS

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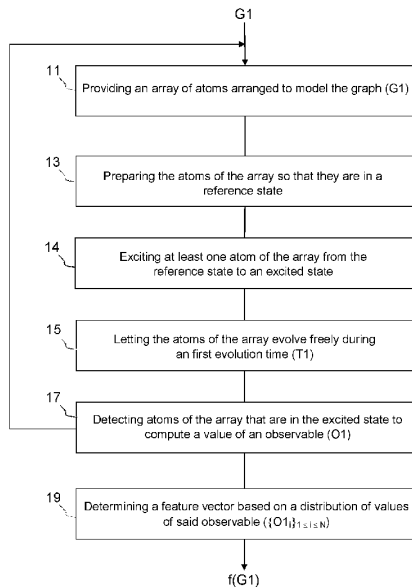


FIG. 1

(57) Abstract: The present disclosure relates to a method for measuring a similarity between two graphs comprising: determining a feature vector for each of the two graphs; and calculating an estimated value of the similarity between the two graphs by comparing the two feature vectors, wherein, for each of the two graphs, determining a feature vector comprises: providing an array (120) of atoms arranged to model the graph (G1), wherein each atom of the array has a plurality of energy levels corresponding to at least a first reference state (a0) and at least a first excited state (a1); preparing the atoms of the array in the reference state (a0); applying an interaction sequence (137) to the array of atoms; detecting atoms of the array that are in the excited state (a1) to compute a value of an observable (O1) of the array of atoms; and determining a feature vector (f) based on a distribution of the plurality of values of said observable (O1<sub>i</sub>).

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