[0020] According to an aspect of another embodiment, a method of analyzing an ultrasound image with respect to an object to which an ultrasound contrast medium has been administered, the ultrasound image being obtained by transmitting ultrasound waves to the object and receiving echo signals reflected from the object, includes: setting an ROI in the ultrasound image; acquiring a time intensity curve representing an average of intensity values for each of ultrasound image frames in the set ROI and a fitting curve representing a tendency of the time intensity curve according to a preset mathematical model; analyzing a type of movement of the object included in the ROI and a change in size of the object based on the acquired time intensity curve and fitting curve; and displaying a user interface configured to receive a user input for selecting frames of the ultrasound image in which the movement of the object and the change in size of the object occur.

[0021] The method may further include: receiving via the user interface a user input for selecting at least one of the type of movement of the object and the change in size of the object; and displaying, based on the user input, a frame of the ultrasound image related to the movement of the object and the change in size of the object.

[0022] The analyzing of the type of movement of the object and the change in size of the object may include analyzing at least one of a simple movement that is a temporary deviation of the object away from the ROI, a periodic movement that is a periodic deviation of the object away from the ROI, and the change in size of the object in the ROI.

[0023] The analyzing of the type of movement of the object and the change in size of the object may include recognizing a state in which an ultrasound probe is not in contact with the object.

[0024] The recognizing of the state in which the ultrasound probe is not in contact with the object may include: determining a frame of the ultrasound image at which the time intensity curve for the ultrasound image included in the ROI has a value of 0; and determining the frame of the ultrasound image as a frame captured when the ultrasound probe is not in contact with the object.

[0025] The analyzing of the type of movement of the object and the change in size of the object may include: calculating a difference between the time intensity curve and the fitting curve; and determining that the object has deviated away from the ROI when the calculated difference exceeds a threshold value.

[0026] The threshold value may be determined based on an average of differences between the time intensity curve and the fitting curve for frames of the ultrasound image and a standard deviation of the differences.

[0027] The analyzing of the type of movement of the object and the change in size of the object may include: setting an additional ROI, which is larger than and includes the ROI, in the ultrasound image; acquiring a time intensity curve for each ultrasound image frame included in the additional ROI; and analyzing a change in intensity values of the ultrasound image included in the additional ROI based on the acquired time intensity curve for the additional ROI.

[0028] The analyzing of the type of movement of the object and the change in size of the object may further include analyzing the movement of the object and the change in size of the object based on a result of the analyzing of the change in intensity values of the ultrasound image included in the additional ROI.

[0029] The analyzing of the type of movement of the object and the change in size of the object may include analyzing, based on the acquired time intensity curve for the additional ROI, whether the intensity values of the ultrasound image included in the additional ROI periodically change.

[0030] The displaying of the user interface may include displaying a position the frame of the ultrasound image in which the movement of the object and the change in size of the object occur in such a manner as to overlap the time intensity curve.

[0031] The method may further include displaying the frame of the ultrasound image selected based on the user input.

[0032] According to an aspect of another embodiment, a non-transitory computer-readable recording medium has recorded thereon a program for executing on a computer the method of analyzing an ultrasound image of an object, which includes: setting an ROI in the ultrasound image; acquiring a time intensity curve representing an average of intensity values for each of ultrasound image frames in the set ROI and a fitting curve representing a tendency of the time intensity curve according to a preset mathematical model; analyzing a type of movement of the object included in the ROI and a change in size of the object based on the acquired time intensity curve and fitting curve; and displaying a user interface configured to receive a user input for selecting frames of the ultrasound image in which the movement of the object and the change in size of the object occur

BRIEF DESCRIPTION OF THE DRAWINGS

[0033] These and/or other aspects will become apparent and more readily appreciated from the following description of the embodiments, taken in conjunction with the accompanying drawings in which:

[0034] FIG. **1** is a block diagram of a configuration of an ultrasound diagnosis apparatus according to an embodiment;

[0035] FIG. **2**A illustrates a graph showing a change in image signal values for each frame of an ultrasound image with respect to an object;

[0036] FIG. **2**B illustrates a time intensity curve (TIC) of an ultrasound image of an object, and FIG. **2**C illustrates the TIC and a fitting curve representing a tendency of the TIC;

[0037] FIG. **2**D illustrates a TIC of an ultrasound image of an object, a fitting curve, a difference value curve representing a difference value between the TIC and the fitting curve, a threshold curve, and a time area curve quantitatively representing a size of the object over time;

[0038] FIG. **3** is a flowchart of a method of analyzing an ultrasound image according to an embodiment;

[0039] FIG. **4** illustrates a TIC and a fitting curve for an ultrasound image of an object according to an embodiment;

[0040] FIG. **5** is a flowchart of a method of analyzing a defect in an ultrasound image by determining whether an object has deviated away from a region of interest (ROI), according to an embodiment;

[0041] FIGS. **6**A through **6**C are diagrams for explaining setting of an ROI and an additional ROI in an ultrasound image according to embodiments;