Therefore, in addition to the difficulty of identifying anomalous portions based on current magnitudes calculated by non-analytical methods from magnetic fields external to the storage battery, even when visualizing using analytical methods, it is essential to appropriately process the data used as boundary conditions before calculation. For example, the evaluation device of PTL 1 is not based on analytical inverse problem solving methods and cannot appropriately inspect storage batteries.

[0006]

In view of this, embodiments of the present disclosure provide a storage battery inspection device and the like that can more appropriately inspect storage batteries.

[Solution to Problem]

[0007]

A storage battery inspection device according to one aspect of the present disclosure includes: an application unit configured to apply an alternating current (AC) current to a storage battery; a sensing unit configured to sense a magnetic field external to the storage battery; a calculation unit configured to calculate an AC current flowing through the storage battery based on a sensing result from the sensing unit; and a correction unit configured to calculate, based on a calculation result from the calculation unit, one or more vectors on a complex plane representing the AC current flowing through the storage battery, calculate one or more projection vectors by projecting the one or more vectors calculated onto a predetermined straight line on the complex plane, and output a corrected signal indicating magnitudes of the one or more projection vectors calculated.

[0007a]

A storage battery inspection method according to another aspect of the present disclosure includes: applying, by an application unit, an alternating current (AC) current to a storage battery; sensing, by a sensing unit, a magnetic field external to the storage battery; calculating, by a calculation unit, an AC current flowing through the storage battery based on a sensing result from the sensing unit; and calculating, by a correction unit, based on a calculation result from the calculation unit, one or more vectors on a complex plane representing the AC current flowing through the storage battery, calculating one or more projection vectors by projecting the one or more vectors calculated onto a predetermined straight line on the complex plane, and outputting a corrected signal indicating magnitudes of the one or more projection vectors calculated.

[0008]

General or specific aspects of the present disclosure may be realized as a system, a device, a method, an integrated circuit, a computer program, or a computer-readable non-transitory recording medium such as a CD-ROM, or any given combination thereof.

[Advantageous Effects of Invention]

[0009]

According to embodiments of the present disclosure, storage batteries can be more appropriately inspected.

[Brief Description of Drawings]

[0010]

[FIG. 1]

FIG. 1 is a block diagram illustrating the configuration of a storage battery inspection device according to an embodiment of the present disclosure.

[FIG. 2]

FIG. 2 is a flowchart illustrating the operation of a storage battery inspection device according to an embodiment of the present disclosure.

[FIG. 3]

FIG. 3 is a conceptual diagram illustrating a specific configuration of a storage battery inspection device according to an embodiment of the present disclosure.

[FIG. 4]

FIG. 4 is a conceptual diagram illustrating a specific structure of a magnetic sensor according to an embodiment of the present disclosure.

[FIG. 5]

FIG. 5 is a conceptual diagram illustrating a state in which a storage battery according to an embodiment of the present disclosure is being inspected.

[FIG. 6]

FIG. 6 is a conceptual diagram illustrating a circuit for applying AC voltage according to an embodiment of the present disclosure.

[FIG. 7]

FIG. 7 is a conceptual diagram illustrating the overall configuration of a storage battery inspection device according to an embodiment of the present disclosure.

[FIG. 8]

FIG. 8 is a block diagram illustrating the configuration of a detection circuit according to an embodiment of the present disclosure.