According to a first aspect, the present disclosure provides an arousal level control apparatus comprising:

a setting value calculation means for calculating, under a limitation related to a physical quantity of a surrounding environment of a subject that affects an arousal level of the subject, a setting value for controlling the arousal level of the subject by using a physical quantity prediction model for calculating a prediction value of the physical quantity after a predetermined amount of time has elapsed based on a setting value of the physical quantity and an arousal level prediction model for calculating a prediction value of a variation in the arousal level after the predetermined amount of time has elapsed based on the calculated prediction value of the physical quantity, the physical quantity indicating temperature or illuminance; and

a setting means for setting the calculated setting value to a control target device that affects the physical quantity, the control target device including an air conditioning device or a lighting device.

[0017]

According to a second aspect, the present disclosure provides an arousal level control method comprising:

calculating, under a limitation related to a physical quantity of a surrounding environment of a subject that affects an arousal level of the subject, a setting value for controlling the arousal level of the subject by using a physical quantity prediction model for calculating a prediction value of the physical quantity after a predetermined amount of time has elapsed based on a setting value of the physical quantity and an arousal level prediction model for calculating a prediction value of a variation in the arousal level after the predetermined amount of time has elapsed based on the calculated prediction value of the physical quantity, the physical quantity indicating temperature or illuminance; and

setting the calculated setting value to a control target device that affects the physical quantity, the control target device including an air conditioning device or a lighting device.

[0018]

According to a third aspect, the present disclosure provides a recording medium storing a program which causes a computer to execute steps of:

calculating, under a limitation related to a physical quantity of a surrounding environment of a subject that affects an arousal level of the subject, a setting value for controlling the arousal level of the subject by using a physical quantity prediction model for calculating a prediction value of the physical quantity after a predetermined amount of time has elapsed based on a setting value of the physical quantity and an arousal level prediction model for calculating a prediction value of a variation in the arousal level after the predetermined amount of time has elapsed based on the calculated prediction value of the physical quantity, the physical quantity indicating temperature or illuminance; and

setting the calculated setting value to a control target device that affects the physical quantity, the control target device including an air conditioning device or a lighting device.

[0019]

According to the present disclosure, it is possible to realize an indoor environment that maintains a mental and physical state for high work performance.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020]

FIG. 1 is a schematic block diagram showing an example of a device configuration of an arousal level control system according to an example embodiment.

FIG. 2 is a schematic block diagram showing an example of a functional configuration of an arousal level control apparatus according to an example embodiment.

FIG. 3 is a flowchart showing a first example of a processing procedure in which the setting value calculation unit according to the example embodiment calculates a device setting value and sets it in an environment control device.

CLAIMS

1. An arousal level control apparatus comprising:

a setting value calculation means for calculating, under a limitation related to a physical quantity of a surrounding environment of a subject that affects an arousal level of the subject, a setting value for controlling the arousal level of the subject by using a physical quantity prediction model for calculating a prediction value of the physical quantity after a predetermined amount of time has elapsed based on a setting value of the physical quantity and an arousal level prediction model for calculating a prediction value of a variation in the arousal level after the predetermined amount of time has elapsed based on the calculated prediction value of the physical quantity, the physical quantity indicating temperature or illuminance; and

a setting means for setting the calculated setting value to a control target device that affects the physical quantity, the control target device including an air conditioning device or a lighting device.

2. The arousal level control apparatus according to claim 1, wherein the setting value calculation means calculates the setting value so that the arousal level becomes even higher.

3. The arousal level control apparatus according to claim 2, wherein the setting value calculation means calculates the setting value so that a sum or a mean value of prediction values of a variation in the arousal level becomes even greater for the one subject or more subjects.

4. The arousal level control apparatus according to any one of claims 1 to 3, wherein the setting value calculation means calculates the setting value that satisfies a limitation related to comfort scores calculated for the setting value.

5. An arousal level control method comprising:

calculating, under a limitation related to a physical quantity of a surrounding environment of a subject that affects an arousal level of the subject, a setting value for controlling the arousal level of the subject by using a physical quantity prediction model for calculating a prediction value of the physical quantity after a predetermined amount of time has elapsed based on a setting value of the physical quantity and an arousal level prediction model for calculating a prediction value of a variation in the arousal level after the predetermined amount of time has elapsed based on the calculated prediction value of the physical quantity, the physical quantity indicating temperature or illuminance; and

setting the calculated setting value to a control target device that affects the physical quantity, the control target device including an air conditioning device or a lighting device.

6. A recording medium storing a program which causes a computer to execute steps of:

calculating, under a limitation related to a physical quantity of a surrounding environment of a subject that affects an arousal level of the subject, a setting value for controlling the arousal level of the subject by using a physical quantity prediction model for calculating a prediction value of the physical quantity after a predetermined amount of time has elapsed based on a setting value of the physical quantity and an arousal level

prediction model for calculating a prediction value of a variation in the arousal level after the predetermined amount of time has elapsed based on the calculated prediction value of the physical quantity, the physical quantity indicating temperature or illuminance; and

setting the calculated setting value to a control target device that affects the physical quantity, the control target device including an air conditioning device or a lighting device.