What is claimed is:

1. A photovoltaic air conditioner control method, comprising:

detecting temperature of inverter module on grid-side and current on grid-side of a photovoltaic air conditioner in real time (S101);

determining an interval which the temperature belongs to and an interval which the current belongs to (S102); and

performing frequency limitation and frequency reduction control on the photovoltaic air conditioner according to a determination result (S103), comprises:

controlling a compressor of the photovoltaic air conditioner to continue to operate freely if the temperature is less than or equal to a first temperature threshold and the current is less than or equal to a first current threshold;

controlling the compressor of the photovoltaic air conditioner to operate stably at a current frequency if the temperature and the current continue to rise, when the temperature is greater than or equal to a second temperature threshold and less than a fourth temperature threshold, or the current is greater than or equal to a second current threshold and less than a fourth current threshold;

controlling the compressor of the photovoltaic air conditioner to reduce its frequency if the temperature and the current continue

to rise, when the temperature is greater than or equal to the fourth temperature threshold, or the current is greater than or equal to the fourth current threshold;

controlling the compressor of the photovoltaic air conditioner to exit frequency reduction operation after controlling the compressor of the photovoltaic air conditioner to reduce its frequency, if the temperature is less than or equal to a third temperature threshold and the current is less than or equal to a third current threshold;

controlling the compressor of the photovoltaic air conditioner to operate stably at a current frequency if the temperature is greater than or equal to the second temperature threshold and less than the third temperature threshold, or the current is greater than or equal to the second current threshold and less than the third current threshold; and

controlling the compressor of the photovoltaic air conditioner to exit frequency limitation operation if the temperature is less than or equal to the first temperature threshold and the current is less than or equal to the first current threshold, wherein:

the first temperature threshold is less than the second temperature threshold, the second temperature threshold is less than the third temperature threshold, the third temperature threshold is less than the fourth temperature threshold, the first current threshold is less than the second current threshold, the

second current threshold is less than the third current threshold, and the third current threshold is less than the fourth current threshold.

2. The photovoltaic air conditioner control method according to claim 1, wherein performing frequency limitation and frequency reduction control on the photovoltaic air conditioner according to a determination result comprises:

setting or resetting preset flag bits according to the determination result, wherein the preset flag bits comprise a flag bit for frequency limitation and a flag bit for frequency reduction; and

performing frequency limitation and frequency reduction control on the photovoltaic air conditioner according to strategies corresponding to the processed preset flag bits.

3. The photovoltaic air conditioner control method according to claim 2, wherein setting or resetting preset flag bits according to the determination result comprises:

resetting the flag bit for frequency limitation and the flag bit for frequency reduction if the temperature is less than or equal to a first temperature threshold and the current is less than or equal to a first current threshold;

setting the flag bit for frequency limitation if the

temperature and the current continue to rise, when the temperature is greater than or equal to a second temperature threshold and less than a fourth temperature threshold, or the current is greater than or equal to a second current threshold and less than a fourth current threshold; and

setting the flag bit for frequency reduction if the temperature and the current continue to rise, when the temperature is greater than or equal to the fourth temperature threshold, or the current is greater than or equal to the fourth current threshold.

4. The photovoltaic air conditioner control method according to claim 3, wherein setting or resetting preset flag bits according to the determination result further comprises:

resetting the flag bit for frequency reduction after setting the flag bit for frequency reduction, if the temperature is less than or equal to a third temperature threshold and the current is less than or equal to a third current threshold;

setting the flag bit for frequency limitation if the temperature is greater than or equal to the second temperature threshold and less than the third temperature threshold, or the current is greater than or equal to the second current threshold and less than the third current threshold; and

resetting the flag bit for frequency limitation if the temperature is less than or equal to the first temperature

threshold and the current is less than or equal to the first current threshold.

5. The photovoltaic air conditioner control method according to claim 2, wherein: setting a flag bit indicates “enabled” and resetting a flag bit indicates “disabled”.

6. The photovoltaic air conditioner control method according to claim 2, wherein:

a strategy corresponding to setting the flag bit for frequency limitation is to perform frequency limitation operation on the photovoltaic air conditioner;

a strategy corresponding to resetting the flag bit for frequency limitation is not to limit the frequency of the photovoltaic air conditioner or exit frequency limitation operation, and not to limit photovoltaic power generation;

a strategy corresponding to setting the flag bit for frequency reduction is to perform frequency reduction operation on the photovoltaic air conditioner; and

a strategy corresponding to resetting the flag bit for frequency reduction is not to perform frequency reduction operation on the photovoltaic air conditioner, or exit frequency reduction operation.

7. A photovoltaic air conditioner control apparatus, comprising:

a detection module (21) configured to detect temperature of inverter module on grid-side and current on grid-side of a photovoltaic air conditioner in real time;

a determination module (22) configured to determine an interval which the temperature belongs to and an interval which the current belongs to; and

a control module (23) configured to perform frequency limitation and frequency reduction control on the photovoltaic air conditioner according to a determination result, comprises:

controlling a compressor of the photovoltaic air conditioner to continue to operate freely if the temperature is less than or equal to a first temperature threshold and the current is less than or equal to a first current threshold;

controlling the compressor of the photovoltaic air conditioner to operate stably at a current frequency if the temperature and the current continue to rise, when the temperature is greater than or equal to a second temperature threshold and less than a fourth temperature threshold, or the current is greater than or equal to a second current threshold and less than a fourth current threshold;

controlling the compressor of the photovoltaic air conditioner to reduce its frequency if the temperature and the current continue

to rise, when the temperature is greater than or equal to the fourth temperature threshold, or the current is greater than or equal to the fourth current threshold;

controlling the compressor of the photovoltaic air conditioner to exit frequency reduction operation after controlling the compressor of the photovoltaic air conditioner to reduce its frequency, if the temperature is less than or equal to a third temperature threshold and the current is less than or equal to a third current threshold;

controlling the compressor of the photovoltaic air conditioner to operate stably at a current frequency if the temperature is greater than or equal to the second temperature threshold and less than the third temperature threshold, or the current is greater than or equal to the second current threshold and less than the third current threshold; and

controlling the compressor of the photovoltaic air conditioner to exit frequency limitation operation if the temperature is less than or equal to the first temperature threshold and the current is less than or equal to the first current threshold, wherein:

the first temperature threshold is less than the second temperature threshold, the second temperature threshold is less than the third temperature threshold, the third temperature threshold is less than the fourth temperature threshold, the first current threshold is less than the second current threshold, the

second current threshold is less than the third current threshold, and the third current threshold is less than the fourth current threshold.

8. A photovoltaic air conditioner control apparatus, characterized by comprising:

a memory; and

a processor coupled to the memory, the processor configured to, based on instructions stored in the memory, carry out the photovoltaic air conditioner control method according to any one of claims 1 to 6.

9. A photovoltaic air conditioner, comprising: the photovoltaic air conditioner control apparatus (3) according to claim 7 or 8.

10. A computer-readable storage medium on which a computer program is stored, characterized in that the computer program implements the photovoltaic air conditioner control method according to any one of claims 1 to 6 when the computer program is executed by a processor.