CLAIMS

1. A method for controlling damping of a shock absorber of a train, comprising:

collecting lateral vibration acceleration of a train frame;

determining whether the damping of the shock absorber of the train matches the lateral vibration acceleration of the train frame; and

adjusting, in a case that the damping of the shock absorber of the train does not match the lateral vibration acceleration of the train frame, damping of a variable damping shock absorber of the train, wherein the damping of the variable damping shock absorber of the train matches the lateral vibration acceleration of the train frame~~.~~

~~2. The method according to claim 1, wherein the determining whether the damping of the shock absorber of the train matches the lateral vibration acceleration of the train frame comprises:~~

~~determining an instability state and a vibration state of the train based on the lateral vibration acceleration of the train frame; and~~

~~determining, when the train is in a serpentine instability state and/or a vibration amplitude of the train is greater than a predetermined amplitude, that the damping of the shock absorber of the train does not match the lateral vibration acceleration of the train frame.~~

~~3. The method according to claim 1 or claim 2~~,

wherein in a case that it is determined that the damping of the shock absorber of the train does not match the lateral vibration acceleration of the train frame, the method further comprises:

determining whether the number of times of adjusting the damping of the variable damping shock absorber of the train is greater than a predetermined number of times during a predetermined duration before a current time instant; and

adjusting, if the number of times of adjusting the damping of the variable damping shock absorber of the train is not greater than the predetermined number of times, the damping of the variable damping shock absorber of the train, wherein the damping of the variable damping shock absorber of the train matches the lateral vibration acceleration of the train

frame.

2. The method according to claim 1, wherein the determining whether the damping of the shock absorber of the train matches the lateral vibration acceleration of the train frame comprises:

determining an instability state and a vibration state of the train based on the lateral vibration acceleration of the train frame; and

determining, when the train is in a serpentine instability state and/or a vibration amplitude of the train is greater than a predetermined amplitude, that the damping of the shock absorber of the train does not match the lateral vibration acceleration of the train frame.

34. The method according to claim 1 or claim 2, further comprising:

acquiring a state of a damping switch of the variable damping shock absorber of the train so as to determine whether the damping of the variable damping shock absorber of the train is adjusted.

45. The method according to claim 34, wherein in a case that the damping switch of the variable damping shock absorber of the train is in an off state, the method further comprises:

controlling the damping switch of the variable damping shock absorber of the train to be switched on; and

adjusting the damping of the variable damping shock absorber of the train, wherein the damping of the variable damping shock absorber of the train matches the lateral vibration acceleration of the train frame.

56. A device for controlling damping of a shock absorber of a train, comprising:

a data collection unit configured to collect lateral vibration acceleration of a train frame;

a determination unit configured to determine whether the damping of the shock absorber of the train matches the lateral vibration acceleration of the train frame; ~~and~~

a damping adjustment determination unit configured to determine whether the number of times of adjusting the damping of a variable damping shock absorber of the train is greater than a predetermined number of times during a predetermined duration before a current time instant; and

a damping adjustment unit configured to adjust, in a case that the damping of the shock absorber of the train does not match the lateral vibration acceleration of the train frame~~,~~ ~~damping of a~~ and the number of times of adjusting the damping of the variable damping shock absorber of the train is not greater than the predetermined number of times, damping of the variable damping shock absorber of the train, wherein the damping of the variable damping shock absorber of the train matches the lateral vibration acceleration of the train frame.

6~~7~~. The device according to claim 5~~6~~, wherein the determination unit comprises:

a state recognition unit configured to determine an instability state and a vibration state of the train based on the lateral vibration acceleration of the train frame; and

a state analysis unit configured to determine, when the train is in a serpentine instability state and/or a vibration amplitude of the train is greater than a predetermined amplitude, that the damping of the shock absorber of the train does not match the lateral vibration acceleration of the train frame.

~~8. The device according to claim 6 or claim 7, further comprising:~~

~~a damping adjustment determination unit configured to determine whether the number of times of adjusting the damping of the variable damping shock absorber of the train is greater than a predetermined number of times during a predetermined duration before a current time instant.~~

7~~9~~. The device according to claim 5~~6~~ or claim 6~~7~~, further comprising:

a damping adjustment verification unit configured to acquire a state of a damping switch of the variable damping shock absorber of the train so as to determine whether the damping of the variable damping shock absorber of the train is adjusted.

8~~10~~. The device according to claim 7~~9~~, further comprising:

a damping switch control unit configured to control the damping switch of the variable damping shock absorber of the train to be switched on.