CLAIMS

1. Method for controlling a braking particle suction system of a friction braking system, the braking particle suction system comprising:

at least one negative pressure source (1), at least one suction mouth (83) arranged close to a friction interface or inside a friction part and connected by at least one pneumatic line to the negative pressure source, a control unit (6) configured to control the negative pressure source, and a means of supplying current braking activation information,

the method providing that the control unit is configured to:

a- control the negative pressure source, for a braking suction sequence (51), according to the current braking activation information, in order to ensure suction is applied as soon as braking is activated,

b- establish at least one cleaning suction condition, outside of any braking sequence,

c- as soon as the at least one cleaning suction condition satisfies a predetermined criterion, control the negative pressure source for a cleaning sequence (52) for the at least one pneumatic line, for a predetermined duration (TN),

the method providing that, in step **b-**, the determination of the cleaning suction condition is a logical/algorithmic calculation which takes into account at least one of the following variables:

- a current speed of the vehicle, in particular if the current speed of the vehicle is above a first speed threshold (V1),
- a time elapsed since a last cleaning sequence,
- a distance traveled since the last cleaning sequence,
- a number of dynamic braking actions carried out since the last cleaning sequence,
- a prevalence of a maintenance mode.

2. Method according to claim 1, wherein the cleaning sequence is triggered, outside of maintenance mode, only if the current speed of the vehicle is greater than a first speed threshold (V1).

3. Method according to claim 1, wherein, in step c-, the negative pressure source is activated to maximum power.

4. Method according to claim 1, wherein the predetermined duration (TN) is selected within a range of between 3 seconds and 15 seconds.

5. Method according to claim 2, wherein the first speed threshold (V1) is greater than 50 km/h and preferably equal to 70 km/h.

6. Method according to claim 1, wherein the cleaning sequence (52) is triggered in response to a request made by a diagnostic device during maintenance mode.

7. Method according to claim 1, wherein the negative pressure source is formed by a turbine driven by an electric motor (11), the control unit (6) being configured to control the electric motor.

8. Method according to claim 1, wherein the control unit (6) is configured to control, during the cleaning sequence, a vent solenoid valve (59) arranged on the pneumatic circuit close to the suction mouth.

9. Braking particle suction **system** of a friction braking system, the suction system comprising at least one negative pressure source (1), at least one suction mouth (83) arranged close to a friction interface or inside a friction part and connected by at least one pneumatic line to the negative pressure source, a control unit (6) configured to control the negative pressure source, and a means of supplying current braking activation information, the suction system being configured to implement the method according to one of the preceding claims.

10. System according to claim 9, further comprising at least one filter (2) for collecting the suctioned particles.

11. System according to claim 9, wherein the system comprises a centralized filter and a centralized turbine, which are connected to four or more suction mouths.

12. System according to claim 9, wherein a vent solenoid valve (59) is provided on the pneumatic circuit and close to the suction mouth.