CLAIMS

1. A method for controlling a thruster of a marine vehicle (1) at least partially submerged in a liquid comprising a body (2) and the thruster (3), the thruster comprising two propellers (AV, AR), each propeller comprising blades intended to turn about a rotation axis of said propeller, characterized in that, the method comprises a step of low-speed maneuver controlling, during which the thruster is controlled in such a way that each propeller generates a flow directed toward the flow generated by the other propeller and reaching the flow generated by the other propeller, a distance between the propellers lying between a non-zero threshold distance and triple the diameter of the larger of the two propellers.

2. The method of controlling as claimed in the preceding claim, in which each propeller (AV, AR) generates a non-zero flow which is directed in the same sense, along the rotation axis of the propeller, over the essential portion of the revolution of the blades of the propeller in the liquid about the rotation axis of the propeller.

3. The method of controlling as claimed in claim 1, in which at least one propeller generates a flow whose sense, along the x axis, varies over the revolution of the blades of the propeller in the liquid about the rotation axis of the propeller.

4. The method of controlling as claimed in any one of claims 1 to 3, in which the distance between the propellers is greater than or equal to 20% of the diameter of the smaller of the two propellers.

5. The method of controlling as claimed in any one of the preceding claims, in which the two propellers comprise an upstream propeller and a downstream propeller along a reference axis in a predetermined sense, and in which during the step of low-speed maneuver controlling, in order that the thruster (3) exerts a non-zero thrust along the reference axis and in said sense, the thruster (3) is controlled in such a way that the upstream thrust force resulting from the upstream flow generated by the upstream propeller exhibits an axial component of greater intensity than that of the axial component of the downstream thrust force resulting from the downstream flow generated by the downstream propeller.

6. The method of controlling as claimed in any one of the preceding claims, in which, during the step of low-speed maneuver controlling, in order that the thruster (3) generates a thrust force exhibiting a zero radial component along a radial axis lying in a plane perpendicular to a reference axis, the thruster (3) is controlled in such a way that the combined flow resulting from the combination of the flows generated by the two propellers (AV, AR), between the two propellers, has symmetry of revolution about the reference axis.

7. The method of controlling as claimed in any one of the preceding claims, in which, during the step of low-speed maneuver controlling, in order that the thruster (3) exerts a thrust exhibiting a non-zero radial component along a radial axis lying in a plane perpendicular to a reference axis, the thruster (3) is controlled in such a way that the combined flow resulting from the combination of the flows generated by the two propellers (AV, AR) between the two propellers (AV, AR) does not have symmetry of revolution about the reference axis.

8. The method of controlling as claimed in the preceding claim, in which during the step of low-speed maneuver controlling, in order that the thruster (3) exerts a thrust exhibiting a non-zero radial component, the thruster is controlled in such a way that at least one propeller generates a flow which does not have symmetry of revolution about the reference axis.

9. The method as claimed in any one of claims 7 or 8, in which, during the step of low-speed maneuver controlling, in order that the vehicle turns about an axis perpendicular to the reference axis, the thruster is controlled in such a way that the thrust force generated by the thruster (3) is applied at a point remote from the center of mass of the vehicle.

10. The method as claimed in any one of claims 7 or 8, in which, during the step of low-speed maneuver controlling, in order that the vehicle (1) translates along an axis perpendicular to the reference axis, the thruster (3) is controlled in such a way that the thrust force generated by the thruster (3) is applied at the center of mass of the vehicle.

11. The method of controlling as claimed in any one of the preceding claims, in which the thruster is a thruster comprising two variable collective and cyclic pitch counter-rotating propellers, a reference axis being an axis joining centers of the two propellers which are points lying on the rotation axes of the respective propellers.

12. The method of controlling as claimed in the preceding claim, in which the rotation axes of the two propellers coincide substantially with the reference axis.

13. A control device making it possible to control a thruster comprising two propellers, each propeller comprising blades intended to turn about a rotation axis of said propeller, the control device being able to implement the method as claimed in any one of claims 1 to 12, characterized in that the distance between the propellers lies between a non-zero threshold distance and triple the diameter of the larger of the two propellers, the control device comprising a control member which, receiving a setting for implementing the step of low-speed maneuver controlling, is configured

to calculate a low-speed configuration in which the thruster must be placed in order that each propeller (AV, AR) generates a flow directed toward the flow generated by the other propeller and reaching the flow generated by the other propeller, the control device furthermore comprising an actuator configured to control the thruster so as to place it in said low-speed configuration.

14. The control device as claimed in the preceding claim, in which the setting for implementing the step of low-speed maneuver controlling comprises a thrust setting, the thruster calculating a low-speed configuration of the thruster such that the thruster generates a thrust in the direction of the thrust setting.

15. A propulsion system comprising a control device as claimed in any one of claims 13 or 14, comprising a thruster (3) comprising two propellers, each propeller comprising blades intended to turn about a rotation axis of said propeller, characterized in that it comprises a control device able to control said thruster and in that the distance between the two propellers lies between a non-zero threshold distance and triple the maximum diameter of the propellers.

16. A marine vehicle intended to be at least partially submerged in a liquid comprising a body (2), and a propulsion system as claimed in claim 15.