















## 5. CONCLUSION

Background information about tracking control of airship is firstly established in the paper. Then a backstepping and sliding mode tracking control algorithm is proposed for three-dimensional tracking control problem. In the control system, there exist two closed loop systems: inner loop ensures the velocity tracking and the outer loop ensures the position and orientation tracking. In the traditional backstepping method, it always suffers from the sharp speed jump problem. Because of the smooth and bounded response properties, the proposed velocity controller uses the bio inspired model to eliminate or inhibit the sharp speed jumps. From the simulation results, it is clearly to see bio-inspired method reduces the sharp speed jumps without significant performance loss while the conventional backstepping method may cause sharp speed jump problem.

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