

Complements of dynamics propulsion systems

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The objective of the present work is to bring in attention a propulsion system that is used nowadays more and more to obtain high speeds. Here we want to calculate its efficiency and to prove the difference between hydro jet propulsion and other types of propulsion. An improved hydro jet propulsion drive is described for a propulsion drive having a pair of vertical substantially rectangular openings on either side of a rotably mounted steering vane with means for directing the propulsion jets from said openings into the steering vane, downwardly, and forwardly for reverse drive of the craft. Advantages: the helm can be removed, reduction of appendices, head resistance is smaller, better steering in longitudinal and transversal direction, the vibrations are lower.

Keywords: propulsion system, hydro jet propulsion, efficiency

6. References

- 1. Krautkremer, Franz, Krautkraemer, Gerd (1998)** - Hydro-jet propulsion device for driving and controlling of particularly flat-bottomed watercrafts;
- 2. Vittorio Quaggiotti,(2005)** - Dynamic-inlet water jet
- 3. www.kimtech.se/en**
- 4. www.network.ch**
- 5. www.uhde-hpt.com**
- 6. Sir William Hamilton (2006)** - HamiltonJet Waterjet History
- 7. John Preston Zimmerlee (1999)** - Dual propulsion steering and control system for watercraft
- 8. Hewko, L.O.; Weber, T.R. (1990)** - Hydraulic Energy Storage Based Hybrid Propulsion System For A Terrestrial Vehicle
- 9. Abraham, R. H.** Complex dynamical systems. Aerial Press, Santa Cruz, California, 1986
- 10. Aron, I.** Board Equipment for Aircraft, Tehnica Publisher, Bucharest, 1984.

- 11. Krope, J., Dobersek, D., Goricanec, D. -** Variation of Pipe Diameters and its Influence on the Flow - Pressure Conditions, *WSEAS Transactions on Fluid Mechanics*, Issue 1, Volume 1, January 2006, pp. 53-59, ISSN 1790-5087.
- 12. Lungu, R.** *Flight apparatus automation*. Publisher Universitaria, Craiova, 2000
- 13. Mattingly, J. D.** Elements of gas turbine propulsion. McGraw-Hill, New York, 1996
- 14. Pappas, S. -** Robust High Performance Servo Controller Design Technique using Matlab/Simulink, *WSEAS Transactions on Systems and Control*, Issue 2, Volume 1, December 2006, pp. 169-173, ISSN 1991-8763.