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| Reaserch Topic: ASV designs/Components | **Main Ideas Covered/Athors and Title** | **S.D. Lee, C.H. Yu, K.Y. Hsiu, Y.F. Hsieh, C.Y. Tzeng, Y.Z. Kehr/Design and experiment of a small boat-track keeping auto pilot** | **Zhouhua Peng, Dan Wang, Zhiyong Chen, Xiaojing Hu, Weiyao Lan/ Adaptive Dynamic Surface Control for Formations of Autonomous Surface With Uncertain Dynamics** | **Dan Wang, Zhouhua Peng, Gang Sun, Hao Wang/ Adaptive Dynamic surface control for coordinated target tracking of autonomous surface vehicles using neural networks** | **Monterio J.R.B.A, Suetake M., Paula G.T, Almeida T.E.P., Santana M.P., Romero G.B., Faracco J.C., Monaco F.J., Pinto R.S./Wind Velocity Neural Estimator for Small Autonomous Surface Vehicles** |
| Lloyd Thurston | *Hydrodynamic* |   | The article covers the desing of ASV's in uncertain water conditions (like the open ovean) therefore the desin layouts in this article are advanced model systems that can be simplified for our controlled system ASV allowing for better top speeeds/ |   | The article is all about an ASV design that works in a controlled enviorment (no currents like our competition) and how the desing needs to work with both present fluids (air and water). |
|  | *Boyancy* |   | Just as stated above the ASV's in the article can help show the most optimal systems for steadying a boat in rough waters and theirfore can be transitioned into our ASV design. |   | As covered above the article discusses ASV's in controlled liquid water, thus, their designs focus on how the frams will have toi remain boyant and steady for the elctronic systems onboard.  |
|  | *Electrical/computer layouts* | The entire article is about a new type of autonomous position tracking system with sketches of component layouts. The ASV team can use this when design out ASV layout along with recieveing a better understanding of how the electrical and computer portions work (since our team is MEA components). |   | The article covers ASV's who must avoid collisions with other ships, track missiles, and perform other key tasks. These systems outlined in this article can allow the ASV to better navigate the competition course and aquire goals at a higher efficeiny. | The articles discusses a model that registers the wind conditions and stears the ASV acordingly while autonomous. Therfore with this special neural network the ASV can remove any wind speed and direction sensors attached, removing some weight from the vehicle which is a key part of competition. |
|  | *Frame Design (how all the components should be brough together)* | The boat used in the experiment has a design layout in the article. Using this design and the rules of competition a new ODU ASV can be designed for this/next competition. | The designs in the article can be related to the current ASV boat and allow for appropriate upgrades to be designed and implimented. |   |   |
|  | *Quadcopter Relays* |   |   | The maping systems used in this article can be implemented not only in the ASV but also the quadcopter giving the ASV a more accuarate aeiral mapping system for navigating the course. | The systems used on the ASV's in this article could be reporpossed for the quad copters design and functionabilty. |