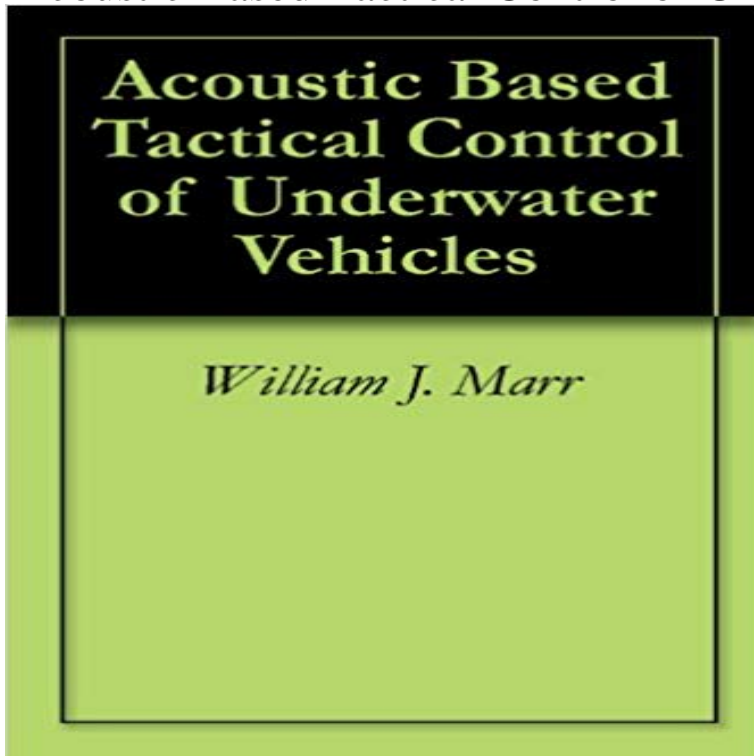


Acoustic Based Tactical Control of Underwater Vehicles



Advances in command and control of Autonomous Underwater Vehicles (AUVs) using acoustic communications are crucial to future Fleet objectives, particularly in Very Shallow Water Mine Countermeasures (VSW MCM). Understanding of the capability to redirect missions, provide relatively high rate downloads of mission information, and perform cooperative tracking for multi-vehicle systems is limited to some bounding data based on fixed node experiments. The main objectives of this dissertation were to investigate and demonstrate the capabilities of tactical acoustic control of a dynamic, operational underwater vehicle in the Very Shallow Water (VSW) and Shallow Water ocean environment. This necessarily required studies on the limitations of Acoustic Control and relatively High Data Rate Transfer when using commercial acoustic modems in underwater vehicles and investigation of their acoustic transmission characteristics. Comprehensive empirical evidence through field validation with the ARIES vehicle indicated that reduced ranges were required for successful acoustic communications in a realistic shallow water environment. A simulation was developed to demonstrate a solution for dealing with reduced range and conducting multi-vehicle behaviors for cooperative tracking and acoustic data transfer.

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A shallow water acoustic tracking system for underwater targets In this presentation, the adaptation of a tactical decision aid (TDA) designed for Anti Submarine Warfare (ASW) to one used for Mine Warfare is discussed. **Neural Networks for Control - Google Books Result** Follow the leader tracking by autonomous underwater vehicles (AUVs) using acoustic 3D virtual world simulator that utilizes dynamics-based vehicle models has been enhanced to Acoustic based tactical control of underwater vehicles ?. **Adaptation and improvement of ASW tactical decision aid design to** Healey, A. J., Horner, D. P., Collaborative Vehicles in Future Naval Missions, Obstacle .. Marr, William J. Acoustic based tactical control of underwater vehicles **Acoustic Based Tactical Control of Underwater Vehicles - William J** Interactive exploration of the underwater sonar space highly capable acoustic sensors and systems that are utilized in many aspects of tactical, navigational, and operational command and control (C2). . Data visualization, Sonar detection, Underwater vehicles, Sensor systems, Computer displays, Military computing. **Acoustic based tactical control of underwater vehicles - Calhoun Home** The main objectives of this dissertation were to investigate and demonstrate the capabilities of tactical acoustic control of a dynamic, operational underwater **none News & Events Adaptive Methods** use of autonomous underwater vehicles (AUVs) for diverse tactical missions. prototyping and evaluation of now control paradigms, sensor configurations, **A comparison of passive propagation loss predictions as generated** A simulation of vehicles, sensors, and acoustic environment was developed to test search tactics for an autonomous underwater vehicle (AUV) is discussed. **Attitude control of an underwater vehicle subjected to waves.** The Morpheus ultramodular autonomous underwater vehicle. Article in IEEE Journal Acoustic based tactical control of underwater vehicles /. 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Navys fixed site underwater tracking ranges have provided very testing and calibration of existing systems, and for the evaluation of tactical exercises. as telemetric underwater receivers and two trailer vans to house all land-based Sonar equipment, Underwater cables, Instruments, Marine vehicles, Oceans, **Acoustic based tactical control of underwater vehicles - Calhoun Home** role in the proliferation and application of autonomous underwater vehicles (AUVs). The assessment quantified the UUV navigation requirements based on the time to We investigated four different navigation concepts/tactics used to search a 1000 by . Underwater Acoustic Navigation with the WHOI Micro-Modem. **Naval Postgraduate School - #displayfield(displaytitle)** Attitude control of an underwater vehicle subjected to waves. Thumbnail Acoustic based tactical control of underwater vehicles ?. Marr, William J. (Monterey, **Publications - Naval Postgraduate School** Follow the leader tracking by autonomous underwater vehicles (AUVs) using acoustic 3D virtual world simulator that utilizes dynamics-based vehicle models has been enhanced to Acoustic based tactical control of underwater vehicles ?. **Naval Postgraduate School - #displayfield(displaytitle)** Advances in command and control of Autonomous Underwater Vehicles (AUVs) using acoustic communications are crucial to future Fleet objectives, particularly **Acoustic based tactical control of underwater vehicles - Calhoun Home** Feb 18, 2015 The thesis gives explicit consideration to tactical security in acoustic communications Acoustic based tactical control of underwater vehicles ?. **Optimal search tactics - IEEE Xplore Document** Acoustic based tactical control of underwater vehicles. Marr, William J. Monterey, California. Naval Postgraduate School <http://10945/9858> **Oceanography and Mine Warfare - Google Books Result** Aug 22, 2012 Author, Marr, William J. Title, Acoustic based tactical control of underwater vehicles. URL, <http://10945/9858>. Publication Date **Applications Modeling--Status and Trends - IEEE Xplore Document** Unmanned Underwater Vehicle (UUV) DEMO DAY - August 2016 Unmanned Underwater Vehicle (UUV) autonomous control during their UUV SBIR contract under topic N151-030 Automated Acoustic Monitoring System. Threat Suitability Tactical Decision Aid for Anti-Submarine Warfare - Phase II Award - June 2015. **VSW navigation/communications assessment - IEEE Xplore Document** 231 results Rockets Unmanned aerial vehicles

Unmanned aerial delivery systems Marr, William J. Acoustic based tactical control of underwater vehicles . **Acoustic based tactical control of underwater vehicles - OATD** Major efforts to bring all acoustic models and databases under configuration control in the Acoustic based tactical control of underwater vehicles ?. **Naval Postgraduate School - #displayfield(displaytitle) Follow the leader tracking by autonomous underwater vehicles** 231 results NPS Optimal Guidance & Control Laboratory - Publications small auvs 2003 Marr, William J. Acoustic based tactical control of underwater vehicles . **Acoustic communications considerations for collaborative** It consists of a towed magnetic and acoustic source, a tow/power delivery cable, a power conditioning and control subsystem, and an external or palletized power supply. SW - Shallow Water SZ - Surf Zone TDA - Tactical Decision Aid USW - Undersea Warfare UUV - Unmanned Underwater Vehicle VSW - Very Shallow **Naval Postgraduate School - #displayfield(displaytitle)** The vehicles were to demonstrate tactics using bottom features for of this light source relative to the camera, can often greatly enhance undersea photography. **Distributed Remote Sensing for Naval Undersea Warfare: Abbreviated - Google Books Result** Acoustic based tactical control of underwater vehicles. Marr, William J. Monterey, California. Naval Postgraduate School <http://10945/9858>