

# MECHANICAL ENGINEER

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## TRACKING CONTROL OF AUTONOMOUS UNDERWATER VEHICLES

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Recovery of Autonomous Underwater Vehicles (AUVs) can often be an autonomous operation itself. In the case of an AUV that is launched and recovered at some significant depth below the surface, the recovery platform to which the vehicle will dock is often not a stationary platform. The recovery cage/platform has dynamics associated with it which are induced by wave motion effects on the ship to which the cage is tethered. In order to successfully recover a vehicle into a cage platform it will be preferred for the vehicle to have the capability to compensate for this motion when making its final approach to the cage. Using active compensation, a smaller cage can be utilized for recovery of an AUV. This research attempts to investigate a means by which a vehicle may be made to track, in depth, dynamic motion with zero phase lag between the vehicle and the recovery platform utilizing an error space controller.

**KEYWORDS:** Underwater Vehicle, AUV, Tracking, Control, Error Space Control, AUV Parameter Identification, AUV Recovery