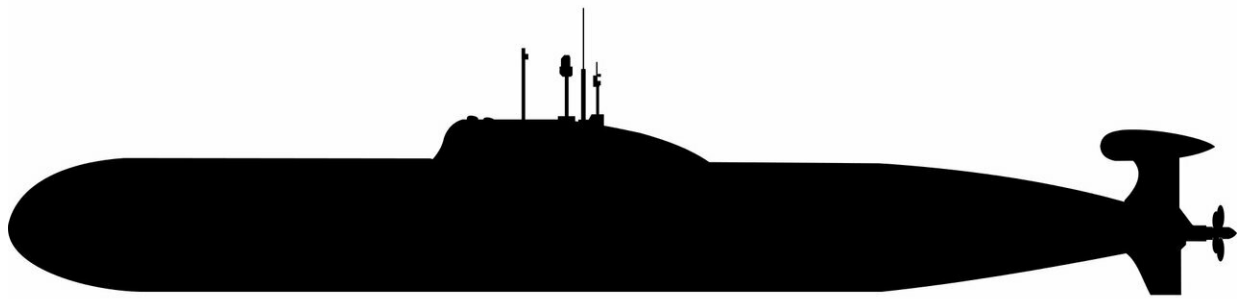# Efficiency boost for robot submarines

March 8 2019, by David Bradley

Credit: CC0 Public Domain

Researchers in China have designed an improved energy-aware and self-adaptive deployment method for autonomous underwater vehicles. The team of Chunlai Peng and Tao Wang of the Guangdong University of Technology, in Guangzhou, provide details in the International Journal of Modelling, Identification and Control.

The researchers explain that autonomous underwater vehicles (AUVs) are essential mobile robots that can travel underwater and perform tasks that are considered to hazardous for people to carry out for various

reasons. There are, however, problems that face the operators of AUVs, specifically the fact that control algorithms are not necessarily optimized for distance nor energy consumption.

The team's approach to enabling energy awareness, as well as self-adaptive deployment, has now been tested with ten AUVs. Their work demonstrates that they can reduce energy consumption with their algorithm in the test AUVs by almost a third. This could be a real boon for marine environment monitoring, military missions, search missions after the loss of a craft at sea, and perhaps even after a tsunami, earthquake or other geological catastrophes.

The team concludes their paper with a nod to the future direction of their research. "Future work will study an energy-supplying problem during the ocean rescue that generating trajectories for AUVs to rendezvous with energy-carrying robots, such as mobile charging stations, i.e., a rendezvous problem for AUVs and mobile charging stations," they explain.

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