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Modified firefly algorithm for area estimation and tracking of fast expanding oil spills

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Highlights

- An improved Firefly Algorithm named Repulsion Propulsion Firefly Algorithm (PropFA) is proposed. Parameters of Firefly Algorithm were made adaptive in nature.
- CEC2013 28 benchmarks test suits are employed to test and compare PropFA with several other algorithms.
- PropFA was applied for the the purpose Spill Area Estimation of a fast expanding oil spill .The swarm agents were directly translated to a a physical robot(Unmanned Aerial Vehicle).
- Experimental results of the PropFA based confinement strategy was noted to be successfull in confining, tracking and area estimation of a spill area upto 16k.m² with a total swarm drone population of 30.

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