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Enhancement of propulsive performance of flapping foil by fish-like motion pattern

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## ACCEPTED MANUSCRIPT

## Highlights

- Flow pattern was considered around a moving foil in different motion patterns.
- Complexity of motion pattern increases the complexity of fluid structures in wake region.
- Solved flow shows the initiation, growth and shedding of core vortices are affected by motion of wall (foil).
- Fish-like motion pattern can significantly enhance the propulsive efficiency
- Fish-like motion pattern also brings a complex hydrodynamics loop (force versus angle of attack).

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