

COMPUTATIONAL INVESTIGATION OF OCTOPUS ARM HYDRODYNAMICS

Asimina Kazakidi[▲], Vasileios Vavourakis, John A. Ekaterinaris, Dimitris P. Tsakiris
Foundation for Research & Technology - Hellas (FORTH), Greece

KEYWORDS –

ABSTRACT – Existed studies of bio-inspired robotic systems navigating in fluid environments have oversimplified the effects of flow in their dynamic models, and hence the generated hydrodynamic forces. Utilizing computational fluid dynamic techniques, we investigate the hydrodynamics of the octopus arm. Large size hybrid-type meshes were constructed to accurately describe the complex geometry details and for capturing complex flow features. The results obtained will be used for assisting the design of robotic octopus prototypes and of corresponding control strategies.