

| | |
|--|---|
| <p align="center">Proposition de thèse de doctorat</p> <p align="center">Début : 2017-2018</p> <p>Titre de la thèse : Study of added resistance of ship in waves</p> <p>Laboratoire : LHEEA</p> <p>Equipe : H2I</p> <p>Localisation de la thèse : Ecole Centrale de Nantes</p> | |
| <p>Directeur de thèse Le Touzé David Tél : 0240371512 Mail : david.letouze@ec-nantes.fr</p> | <p>Co-Encadrants Benjamin Bouscasse Lionel Gentaz Mail : benjamin.bouscasse@ec-nantes.fr, lionel.gentaz@ec-nantes.fr</p> |
| | |

| |
|---|
| <u>Description du sujet</u> |
| <p>The proposed PhD thesis will be in the frame of a long-term collaboration project between ECN and Bureau Veritas (Centrale Nantes – Bureau Veritas chair programme) which aims at introducing CFD (Computational Fluid Dynamics) in the study of wave-ship interactions towards ship certification rules.</p> <p>Added resistance (or power) of ships in waves is currently a major topic of the naval field, due to economic and environmental reasons (energy consumption) and safety reasons (safe manoeuvring in waves). Whereas resistance/power prediction of ships on calm water has become accurate and standardly accessible by CFD in the last decade, the situation with waves is much more complex. No accurate solver exists to predict ship evolution in complex sea-states for long times.</p> <p>It will first be reviewed the different ways to address this problem: experimentally at model or full scale, numerically with simplifications (potential flow) or using coupling strategies between wave models and CFD solvers. Then a strategy of study will be defined, exploring one of several of these possibilities, alone or in association. Findings will be validated against the literature and dedicated experiments in the large oceanic wave tank of ECN.</p> |

| |
|--|
| <u>Compétences requises</u> |
| Master in Fluid Mechanics and/or Applied Maths |

| |
|--|
| <u>Commentaires Supplémentaires</u> |
| <p>Etude en relation : Chaire Centrale Nantes – Bureau Veritas</p> <p>Financement prévu : Chaire Centrale Nantes – Bureau Veritas</p> <p>Indemnité : Oui (pour les étudiants non déjà boursiers)</p> <p>Montant net mensuel envisagé :</p> |