Four Master theses

UNIVERSITY OF WOLLONGONG AUSTRALIA

Friedrich-Alexander-Universität Erlangen-Nürnberg

To students at the Technical Faculty

(Computational engineering, Medical Engineering, Maschinenbau, Mechatronics, Applied Mathematics, Data Science)

Master theses in experimental and numerical surfing sciences

Surfing (Wellenreiten) becomes more and more popular in the professional sports but also in amateur sports due to the increasing number of city waves as the Fuchslochwelle in Nürnberg or the O2 Surftown in Munich. Our research group is assembled of scientists from the University Hospital Erlangen and the University of Wollongong (Prof. Panhuis) in Australia covering all relevant fields of interest in surfing sciences (board/fin mechanics, fin design, surfing and wave hydrodynamics, surfers' biomechanics, etc.). With the Nürnberger Dauerwelle e.V. (https://www.nuernberger-dauerwelle.de/fuchslochwelle/), we have a very good test environment for experimental studies in addition to the great Australian's shores in the region of Wollongong. The theses are supervised by Prof. Döllinger/PD Kniesburges and executed in close cooperation with Prof. Panhuis (Wollonging).

Within our researcher group, we are always looking for motivated students of Engineering who want to write a MA thesis within the highly interesting field of surfing sciences.

In this context, we are have the following topics for MA theses:

- Hydrodynamics characteristics of innovative fin designs (**numerical thesis**)
- Analysis of the hydrodynamic excitation of surfboard fins by vortex shedding phenomena (**numerical and experimental thesis**)
- Simulation of the fluid-structure interaction of fins under realistic flow loads in surfing maneuvers (**numerical thesis**)
- Development and integration of sensors within board and fins (**experimental thesis**)

We are searching for students with

- high motivation and dedication to apply their skills and knowledge in a completely new field.
- high interest in sports and sports biomechanics.
- experience in or willingness to learn and apply experimental and numerical methods in hydro-/aerodynamics, biomechanics and material sciences.

If you a now interested to join our group and prepare your **master thesis** in the field of surfing sciences, please contact us for more information and/or a personal meeting without obligation.

Contact persons:

Prof. Dr.-Ing. M. Döllinger (michael.doellinger@uk-erlangen.de / Tel. 09131-85 33814)

PD Dr.-Ing. S. Kniesburges (stefan.kniesburges@uk-erlangen.de / Tel. 09131-85 32616)