

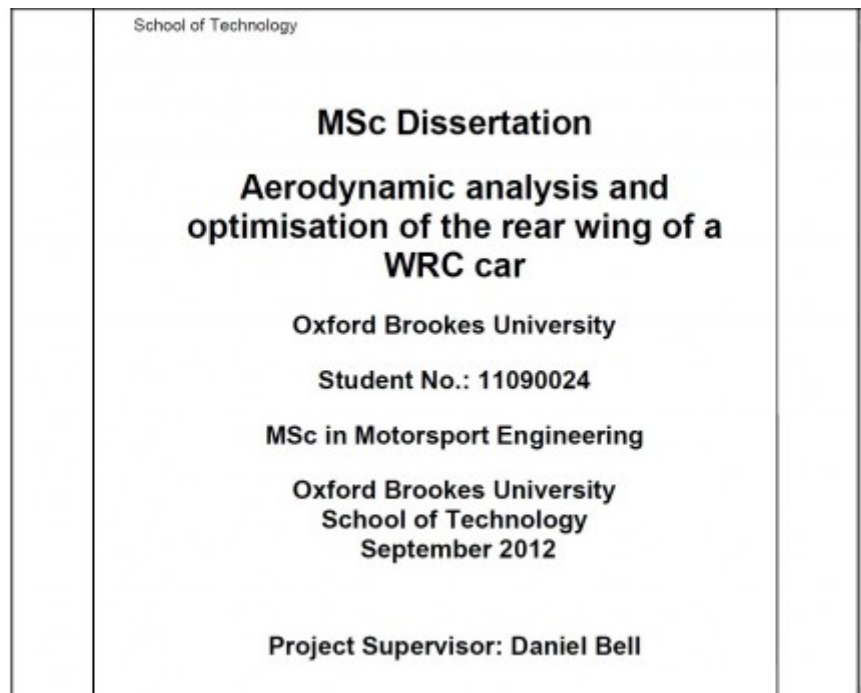


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[Home](#) > Aerodynamic analysis and optimisation of the rear wing of a WRC car

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## Aerodynamic analysis and optimisation of the rear wing of a WRC car




**Date:**

Thursday, September 27, 2012

[Aerodynamic analysis](#) [1]

**Abstract:**

This project is an introduction on the aerodynamics of a World Rally Championship car, a subject which has only been briefly covered by published literature. Because of this, the main aim of the project is to fill this gap on the published literature using CFD simulations on a 2008 Subaru Impreza WRC S14 developed by Prodrive. The project has been focused on the design of the rear wing of the car, studying the final design that the car used and the solutions adopted by the designers. To do so, the effects that different parts from the rear wing have on the overall car have been deduced using different simulations. Then, the design has been evaluated under yawed conditions and on jump situations, confirming the results with the results of similar studies from books and SAE papers when possible. Finally, a series of modifications have been proposed based upon the results from the different analysis undertaken. One of them has been simulated and the results confirm an increase of downforce in yaw, improving the original design.

 [zpch 2011 0148.pdf](#)[2]

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