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DIPARTIMENTO DI
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AEROSPAZIALI

Formula One Aerodynamic Development

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Abstract

A Formula One team is nowadays a very complex industry made by tens of departments and working groups operating with tight deadlines and aggressive schedules due to race calendar. The complexity of the cars and the high level of technology available require a large number of people involved on track, and at the factory. A top team can reach 800 employees for designing and building the chassis only, the good communication and collaboration between departments is therefore vital to meet the deadlines. Aerodynamic development is a fundamental part of car design where a fine tuning of CFD, WT tunnel tests and Track experiments are deployed to ensure the car is efficient on all track layouts and in every racing conditions. While Wind Tunnel has been the main tool for aerodynamic development for many years, now thanks to always increasing computing capabilities and shorter turnaround times, CFD is establishing its essential influence during the design process and it's even more trusted and used even if strictly limited by FIA Sporting Regulation.

CFD in combination with latest scientific visualization techniques allows ultimately the Aerodynamic Engineer to understand better and deeper the physics around the car.

Endless research and benchmarking of new CFD technologies is essential to guarantee that the Team stays at the pinnacle of the Sport and makes the working day at the office really exciting and a continuous challenge.

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