



# KINETIC SIM

• DESIGN • SIMULATION • ENGINEERING



KINETICSIMULATION.COM

EXPERTS IN FLUID DYNAMICS AND STRUCTURAL ANALYSIS





# EXPERIENCE / BACKGROUND

Kinetic Sim is an engineering design and simulation consultancy specialising in computational fluid dynamics and structural analysis.

Kinetic Sim was established in 2014 by David Higgins following 9 years of CFD, FEA and design work in aerospace and sports engineering including designing world championship and gold medal winning track bikes.

We aim to make engineering simulation such as CFD accessible to grass-roots sports engineering downunder. Aero is everything and we work to all budgets. From consultancy based on experience, to full CFD analysis and wind tunnel testing.

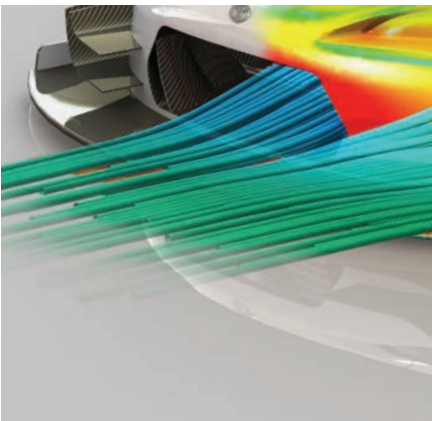
Kinetic Sim have partnered with market leading CFD and FEA software supplier ANSYS. ANSYS fluid dynamics solutions provide results you can trust with many of the top Formula 1 Teams and America's cup teams choosing ANSYS CFD.







# CONSULTANCY SERVICES



## CFD ANALYSIS

CFD simulation allows us to predict, with confidence, the impact of fluid flows on your design. CFD is commonly referred to as a virtual wind tunnel, however its capabilities go well past what a wind tunnel is capable of providing at a fraction of the cost. CFD is also extremely repeatable across a large number of setup variables and removes the inaccuracies and noise of wind tunnel testing.

## FEA ANALYSIS

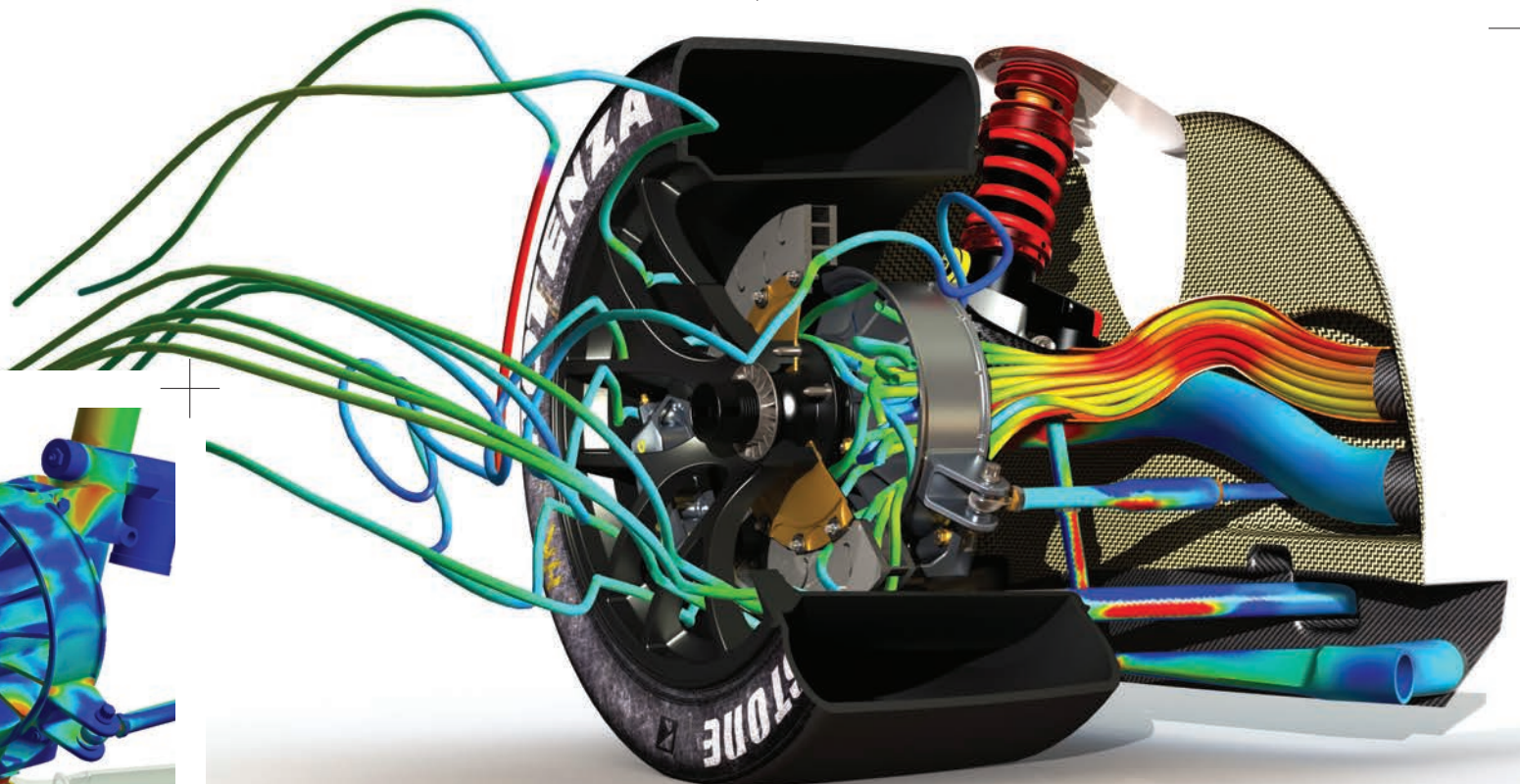
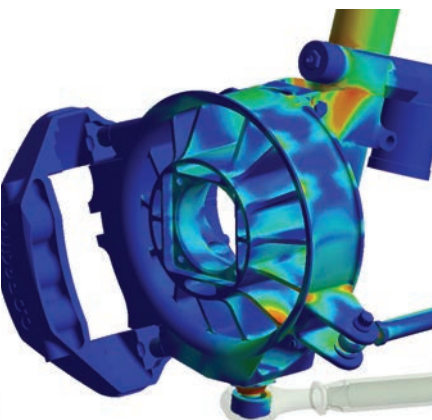
FEA allows us to rapidly solve complex structural engineering problems. Our FEA analysis tools we use from market leader, ANSYS provide the ability to simulate every structural aspect of a design:

- Linear static analysis that provides stresses or deformations.
- Modal analysis that determines vibration characteristics.
- Advanced transient nonlinear phenomena involving dynamic effects and complex behaviours.

## AERODYNAMIC DESIGN

In some cases, simulation is not the most optimal solution where budgets are limited. At Kinetic Sim we can offer aerodynamic solutions based on our experience and provide value to your design.

We are also available to spend time with you and your team to review aerodynamics based on flow visualisation and data acquisition.







# MOTORSPORT AERODYNAMICS



**WHATEVER YOUR AERO REQUIREMENTS ARE KINETIC SIM CAN HELP.**

## Aeromaps

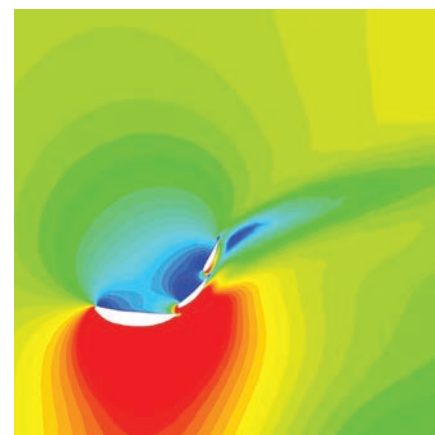
- Increase the performance and the understanding of your car

## Aerodynamic Design and Development

- Kinetic Sim have many years of design experience including winning a Red Dot Design Award and Best Award Purple Pin for product design.

**WE CAN APPLY OUR FINDINGS FROM OUR AERODYNAMIC ANALYSIS TO YOUR PROJECT.**

- Drag Reduction
- Component Design
  - Airboxes, Intercooler/Radiator End Tanks, Intake piping etc.



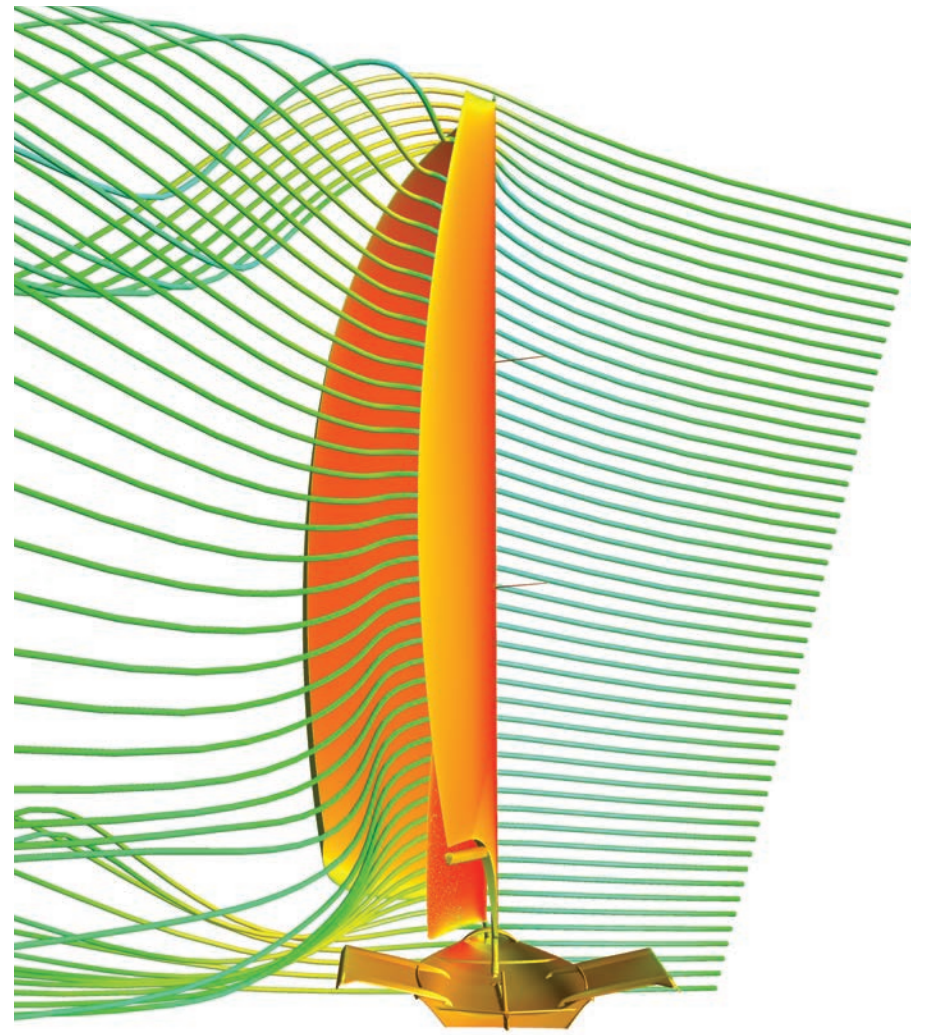
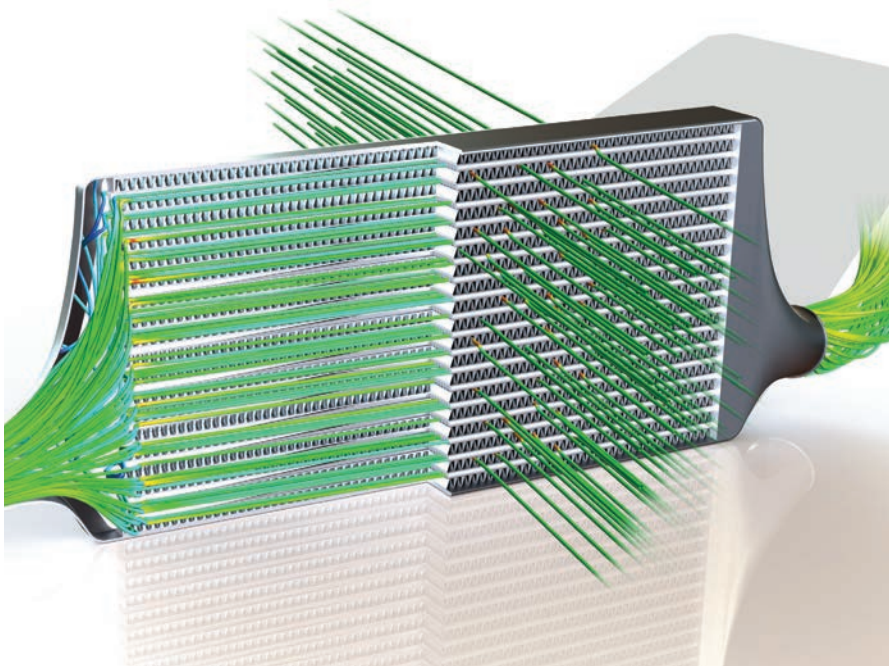




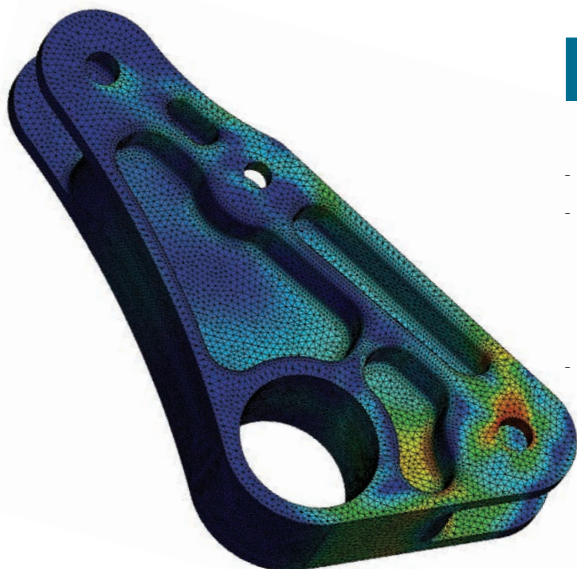
# FLUID DYNAMICS



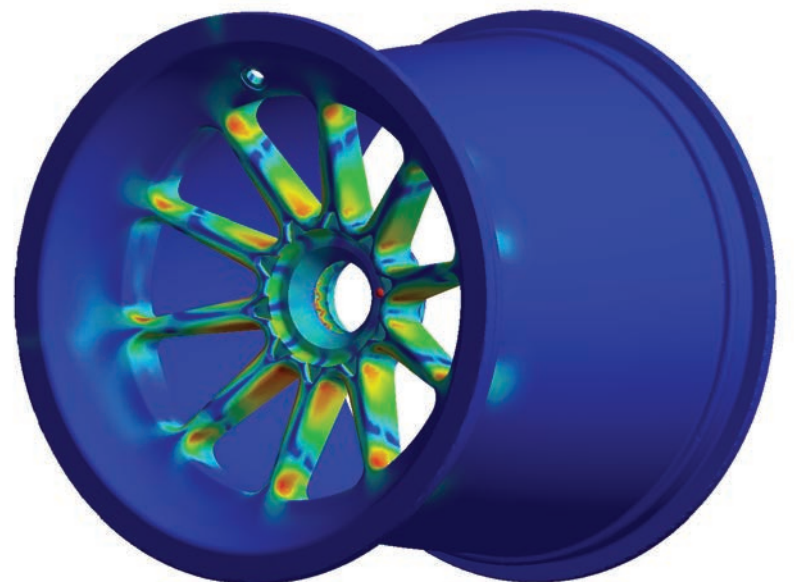
- Marine
- Drag Reduction
- Automotive Aerodynamics
  - Intake/Airbox Design
  - Intercooler/Radiator Optimisation
- Marketing Material
  - Renders/CFD overlays
- Your Product



# FEA ANALYSIS



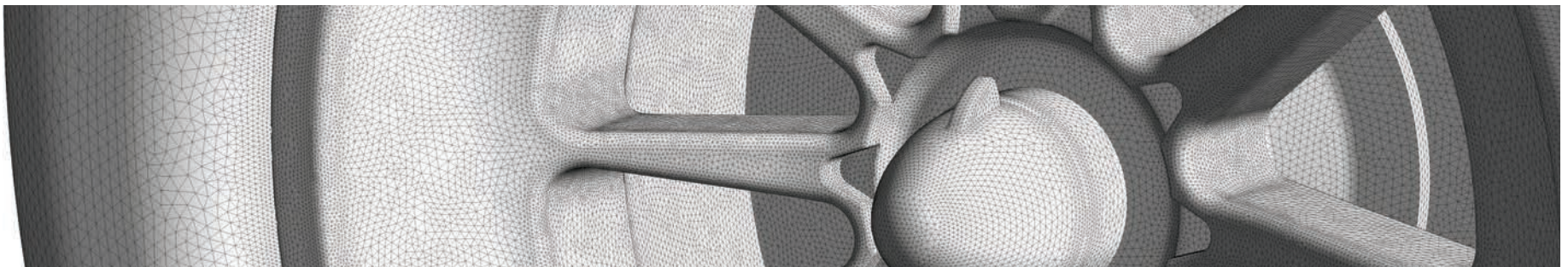
- Structural Analysis – Metallic/Composite
- Motorsport
  - Suspension Design
  - Engine/Transmission Mounts
  - Roll Cage/Subframe Design
- Aerospace







# HARDWARE



## ANSYS HPC - HIGH PERFORMANCE COMPUTING

High-performance computing (HPC) adds tremendous value to engineering simulation by enabling the creation of large, high-fidelity models that yield accurate and detailed insight into the performance of a proposed design. These size models are critical in the analysis of Motorsport, Marine and Aerospace designs giving these simulations a high degree of accuracy and confidence that the results will meet customer expectations. This is because

our extremely accurate simulations are predicting the actual performance of the product under real-world conditions.

HPC also adds value by enabling greater simulation throughput. Using HPC resources, our team can analyse not just a single design idea, but many design variations parametrically to fully optimise the design.



**KINETIC SIM**

Auckland, New Zealand

**E** [info@kineticsimulation.com](mailto:info@kineticsimulation.com)

**P** +64 (0) 21 702 755

**W** [kineticsimulation.com](http://kineticsimulation.com)

**f** Kinetic Simulation

**Instagram icon** kinetic\_sim