

Not a drag: breakthrough will create cleaner, faster planes

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(PhysOrg.com) -- A world first model for predicting fluid flows close to surfaces will enable engineers to reduce drag in vehicles, and in turn, lead to more efficient and greener planes, cars and boats, according to a University of Melbourne study.

Research team leader and Federation Fellow Professor Ivan Marusic from the Department of [Mechanical Engineering](#) at the University of Melbourne says skin-friction drag accounts for 50 per cent of fuel expenditure in aircraft, so even modest reductions in drag would save money and significantly reduce carbon emissions.

“When air flows over a surface, skin friction drag is created. Most of this drag is a result of the chaotic and unpredictable nature of the [boundary layer](#) - the layer immediately between the object and the [airflow](#). Accurate knowledge of how this air flows over a surface will provide engineers with more detailed information about resistance,” he says.

The findings, published in *Science* this week, could also assist meteorologists in making more accurate weather predictions, and even improve a cyclist’s lap time.

More information: Predictive Model for Wall-Bounded Turbulent Flow, *Science* 9 July 2010: Vol. 329. no. 5988, pp. 193 - 196. [DOI: 10.1126/science.1188765](#)

Provided by University of Melbourne

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