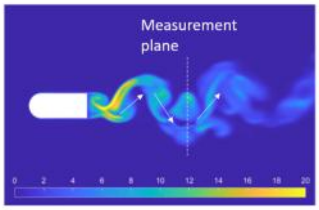
PROJECT NUMBER

22109

Probe for accurate measurements in unsteady fluid flows

A new probe configuration that eradicates the erroneous measurements produced by current state of the art probes in unsteady flows.

Applications: Turbomachinery, Aerodynamic & Hydrodynamic Measurements, Fluid Flow Sensors, Aerospace, Control & Instrumentation Sensors



Features	Benefits
Novel design can simultaneously measure fluid flow angles, velocity and static pressure in unsteady flows	Gives accurate time-averaged flow even when the flow is unsteady
Can be manufactured using micro 3D printing and have a form factor less than 3mm	Cheaper, less complex to implement, and more robust than direct competitors
Systematic errors vastly reduced in unsteady flows compared to current state-of-the art aerodynamic probes, e.g. five-hole-probes (5HP)	Reliable and accurate measurements in steady and unsteady flows; Allows more accurate comparison of data with computational fluid dynamic simulations

Features	Benefits
The same probe gives accurate measurement for both steady and unsteady flow	Removes risk that unexpected flow unsteadiness will cause high measurement error (as for 5HP); Enables accurate time-mean measurements without costly and complex unsteady probes; Reduces the setup time between measurements

Available for

- Consulting
- Licensing

To find out more, contact enquiries@innovation.ox.ac.uk and quote the project number.

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