

Curriculum Vitae
Dr. Paul Bartholomew

I am a Research Associate in the Department of Aeronautics at Imperial College London. I graduated with a first-class Master of Engineering degree in Mechanical Engineering from Imperial College London in 2013 and went on to study for a PhD from the same institution from 2013-2017. My research interests focus on developing methods for variable-density and/or multiphase flows, in particular handling the numerical issues these flows pose relative to flows with constant properties. During my PhD, I developed an implicit solver for the two-fluid model on unstructured meshes, which I used to study dispersed gas-solid flows. Subsequently, I have worked on the development of a variable-density solver called QuasIncompact3D based on the Incompact3D framework and the Low Mach Number approximation thanks to a recent eCSE project (eCSE10-02).

This work is continuing with a new eCSE project (eCSE13-03) to extend the solver to free-surface flows. A particular aspect of this work is ensuring that the scalability of Xcompact3D is maintained by the variable density solver and this has been demonstrated on ARCHER (16k cores), MARCONI (6k cores) and HAZEL HEN (65k cores).