



CONVERGE
CFD SOFTWARE



CONVERGE is a cutting-edge computational fluid dynamics (CFD) software with an emphasis on accuracy, efficiency, and innovation. With truly autonomous meshing, state-of-the-art physical models, and the ability to easily accommodate complex moving geometries, **CONVERGE** is fully equipped to help you solve the hard problems.

We specialize in fast, predictive CFD, so you get accurate simulation results quickly. CONVERGE gives you an edge in a competitive market—you can rapidly explore various design options, predict problem areas in your product before

manufacturing, and optimize your product design using CONVERGE's advanced model optimization tools. And since CONVERGE leads the way in CFD automation, you can spend your time engineering instead of meshing.



INNOVATION IN MESHING

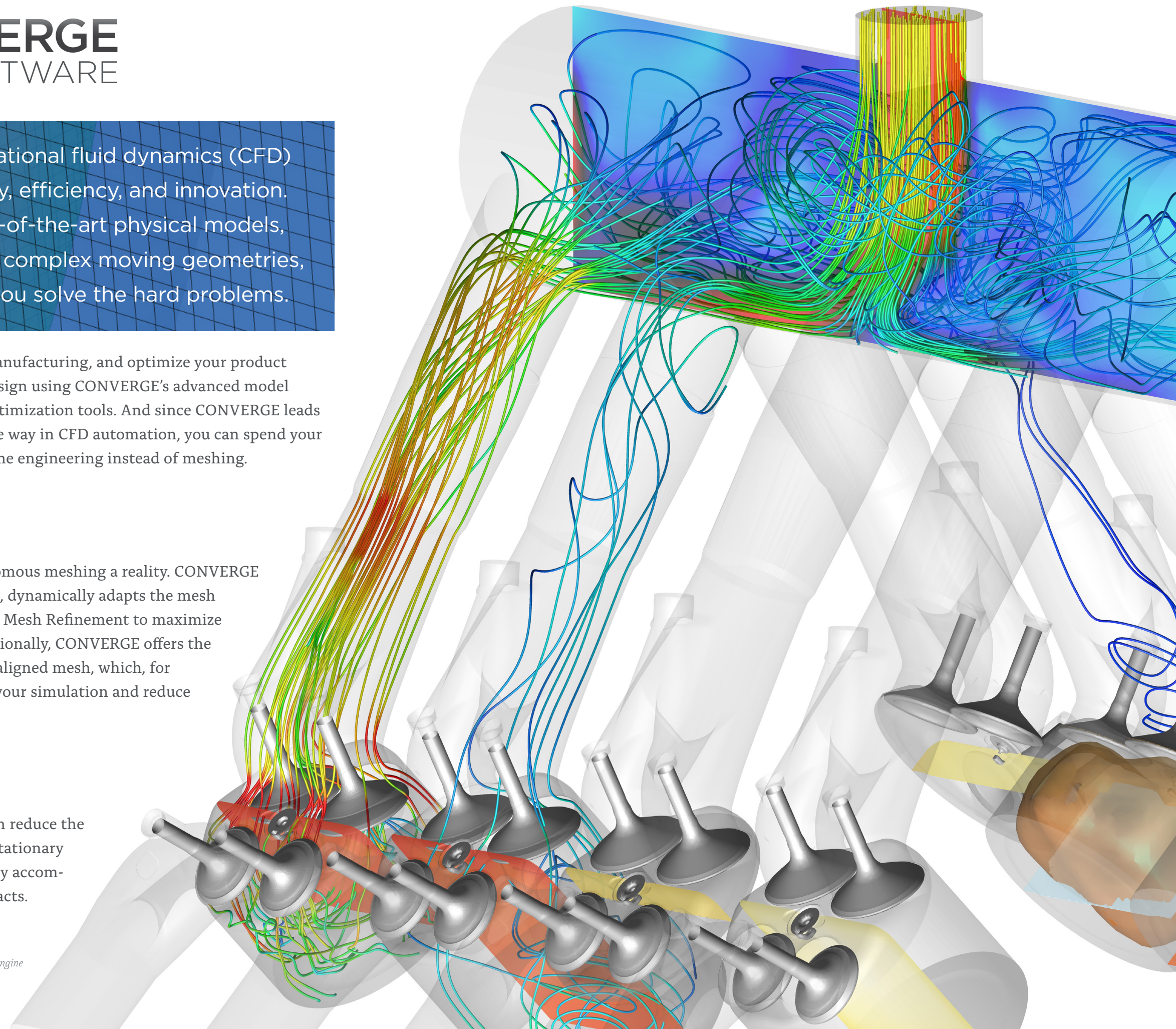
CONVERGE revolutionized CFD by making autonomous meshing a reality. CONVERGE automatically creates a Cartesian mesh at runtime, dynamically adapts the mesh throughout the simulation, and employs Adaptive Mesh Refinement to maximize both accuracy and computational efficiency. Additionally, CONVERGE offers the option to incorporate an inlaid boundary layer or aligned mesh, which, for certain applications, can increase the accuracy of your simulation and reduce cell count.



MOVING BOUNDARIES

Moving meshes create numerical viscosity that can reduce the accuracy of your calculations. CONVERGE uses a stationary mesh that is regenerated at each time-step to easily accommodate moving geometries without creating artifacts.

Multi-cylinder spark-ignition engine





DETAILED CHEMISTRY

When it comes to reacting flows, an accurate chemistry solver is key to obtaining predictive simulation results. CONVERGE's SAGE detailed chemistry solver is fully coupled to the flow solver to maximize efficiency and accuracy.



PHYSICAL MODELS

CONVERGE contains a suite of advanced physical models that can accurately capture the complex physics of real-world systems, including turbulence, fluid-structure interaction, multi-phase flows, and conjugate heat transfer.



CHEMISTRY TOOLS

Much more than just a CFD solver, CONVERGE includes a suite of 0D and 1D chemistry tools that allow you to efficiently study reacting systems, manipulate chemical mechanisms, and generate data tables required for certain combustion models.



HIGH-PERFORMANCE COMPUTING

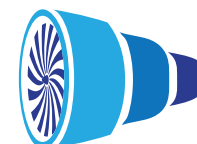
Running large, complex simulations requires a lot of processing power and a highly scalable code. Our cloud computing platform, CONVERGE Horizon, offers affordable, on-demand access to the latest HPC resources. Furthermore, we actively collaborate with industry, academic, and government partners to ensure that CONVERGE scales well on thousands of cores.

APPLICATIONS

CONVERGE's autonomous meshing, robust solvers, and advanced physical models make it the ideal tool for simulating a diverse array of applications: gas turbines, electric vehicle systems, IC engines, compressors, pumps, wind turbines, and many others.



INTERNAL COMBUSTION ENGINES



GAS TURBINES



FUEL INJECTORS AND SPRAYS



EXHAUST AFTERTREATMENT



COMPRESSORS, FANS, AND BLOWERS



PUMPS



GENERAL FLOW



OIL AND GAS



VALVES



E-MOBILITY



BIOMEDICAL



HYDROGEN



WIND TURBINES

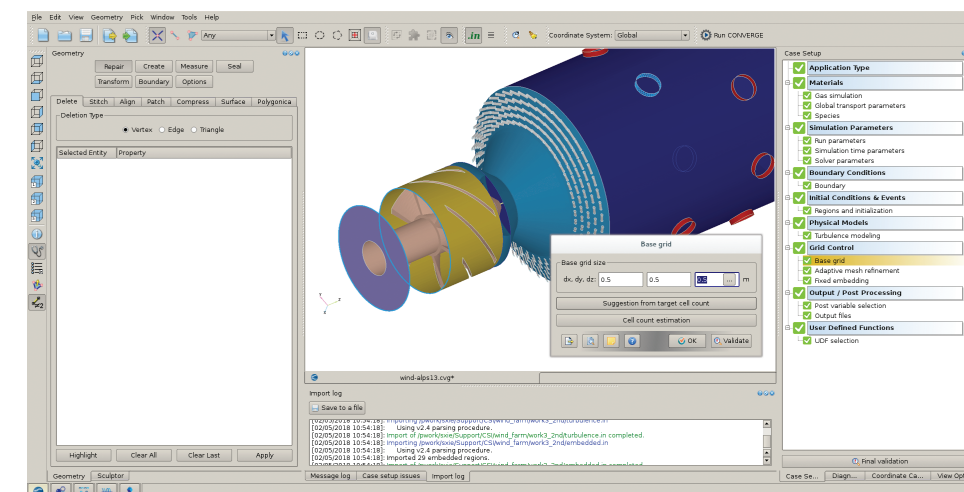


ROCKETS



CONVERGE STUDIO

CONVERGE Studio, CONVERGE's user-friendly graphical user interface, contains a host of powerful pre- and post-processing tools designed to expedite and simplify your simulation workflow.



Liquid fuel gas turbine combustor

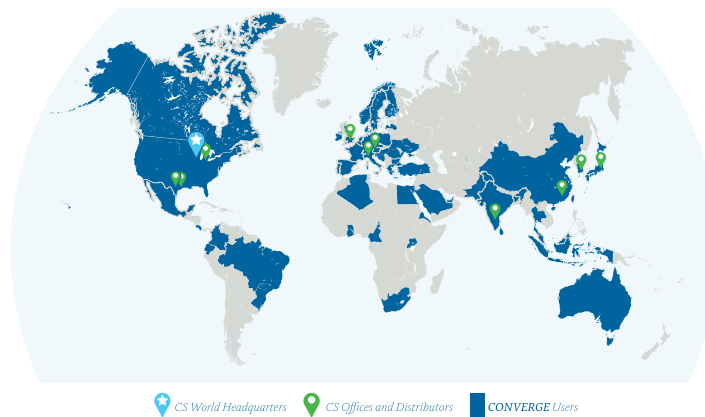
CONVERGE Studio interface



Convergent Science is an innovative, rapidly expanding computational fluid dynamics software company that develops **CONVERGE**. Convergent Science is dedicated to creating software that best meets your CFD needs and providing unparalleled customer support.

OFFICES & DISTRIBUTORS

In 25 short years, Convergent Science has grown from a part-time consultancy founded by University of Wisconsin-Madison graduate students into an industry-leading global company with employees working in six offices on three continents and distributors covering the whole of Asia.



CLIENTS

CONVERGE is used by companies, government laboratories, and academic institutions around the world, simulating everything from spray and combustion in internal combustion engines to blood flow in the human body.

COLLABORATORS

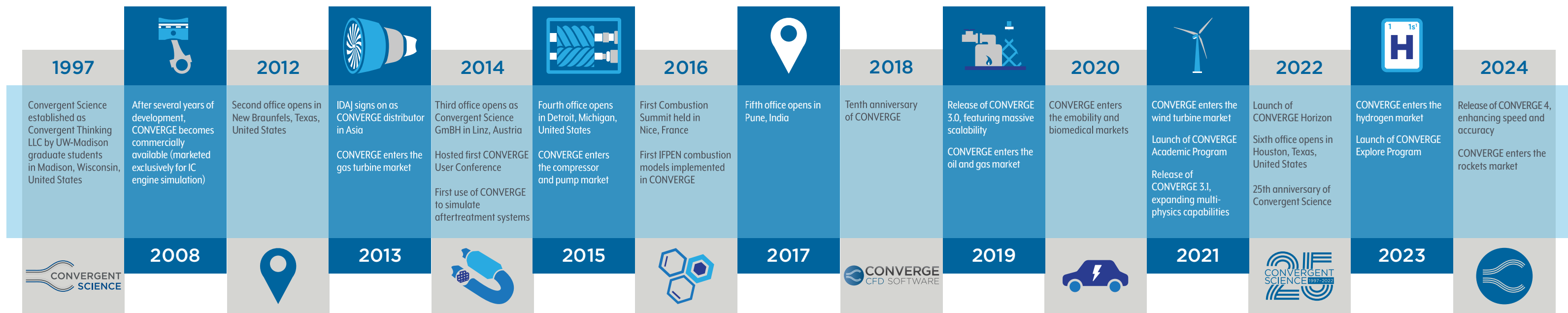
Convergent Science is proud to collaborate with elite institutions to implement innovative pre- and post-processing tools, state-of-the-art physical models, and efficient solvers, and to optimize the performance of CONVERGE on modern HPC architectures.

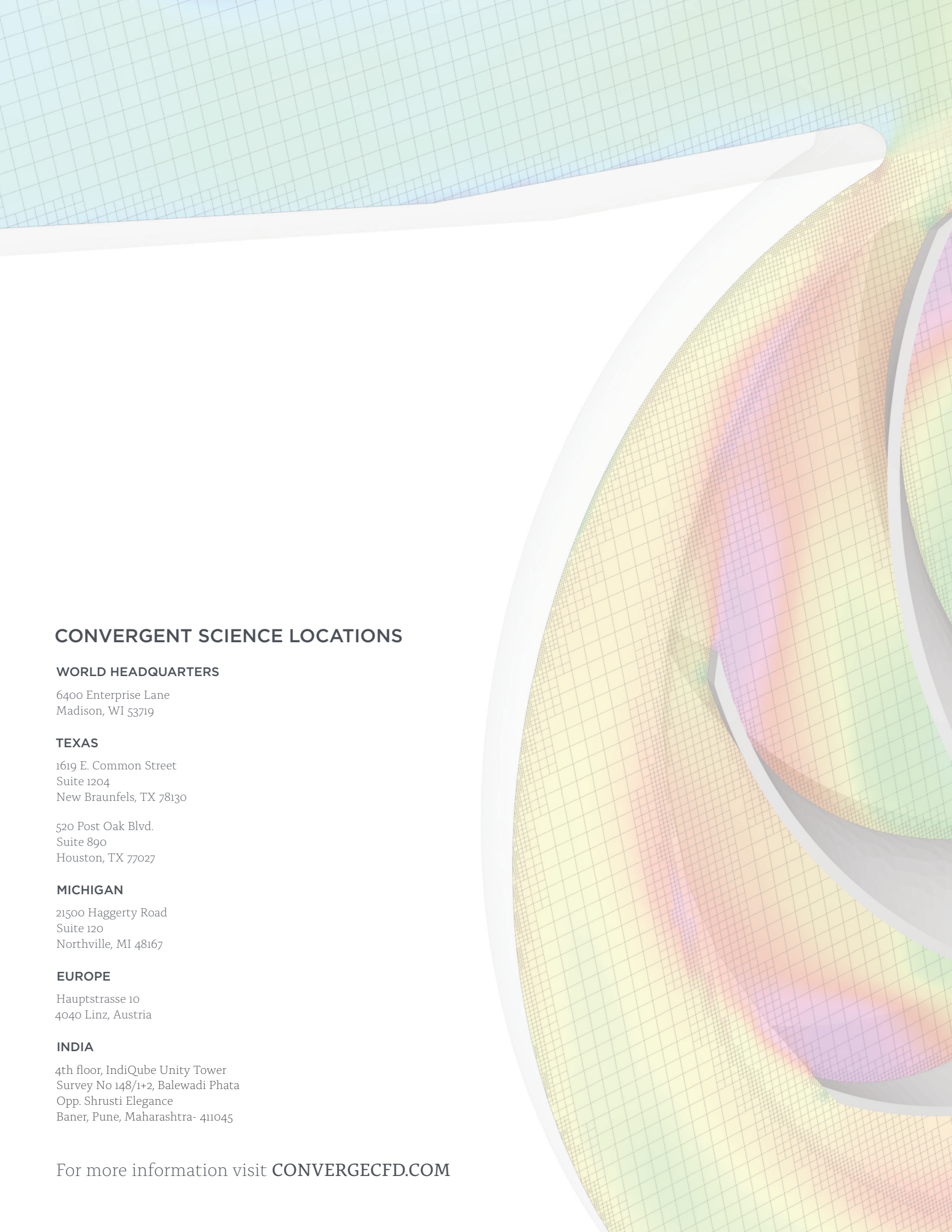
ACADEMIC PROGRAM

More than 200 universities around the world participate in the CONVERGE Academic Program, which provides exclusive license deals, free training, and free support to academic institutions. You can customize CONVERGE's models or incorporate your own to tackle the challenging problems in your research field.

CONSORTIA

As a founder or member of several consortia, Convergent Science is actively pursuing the advancement of computational fluid dynamics, developing and refining chemical mechanisms and physical models, and working to create highly efficient propulsion technology.





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