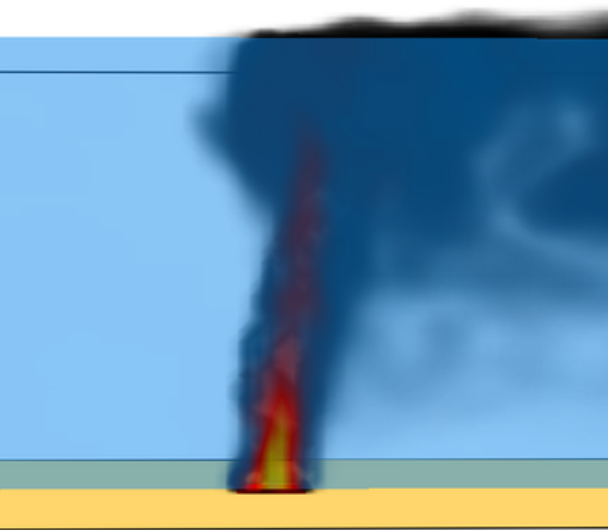


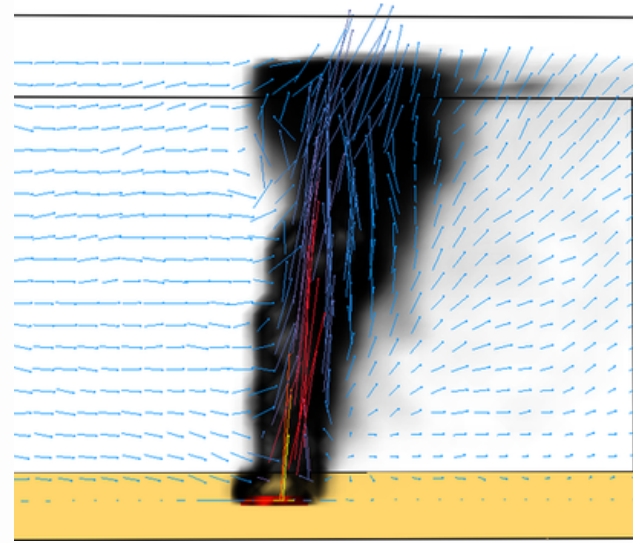


Atmospheric Dispersion of Fire Products

EnviroComp scientists have recently downloaded, run, and tested the **Fire Dynamics Simulator (FDS)** developed by the **National Institute of Standards and Technology (NIST)**. FDS is a fully 3D large-eddy simulation (LES) code for low-speed flows, with an emphasis on smoke and heat transport from fires. The computer code is **well-documented** with guides, technical references, validation studies, and peer-reviewed publications.



Example of FDS Simulation of a Fire Plume in Stable Atmospheric Conditions with color-coded temperature. Download [animation](#).

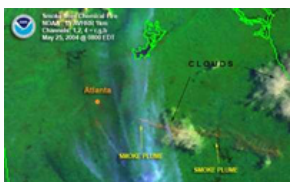


Example of FDS Simulation of a Fire Plume in Neutral Atmospheric Conditions with color-coded wind vectors. Download [animation](#).

Atmospheric simulation of plumes created by fires is a challenging task. In fact, the plume models **recommended** by regulatory agencies (e.g., **AERMOD**) for air pollution studies are not designed to simulate emissions from fires and can only be used under very simplifying assumptions. Instead, FDS is a **computational fluid dynamics (CFD)** model of fire-driven fluid flow and solves numerically a form of the **Navier-Stokes equations** with an emphasis on smoke and heat transport from fires. FDS provides state-of-the-science numerical tools for scientifically rigorous simulations.

Some of our tests are presented above in the figures and animations for neutral and stable atmospheric conditions. We are now ready to apply FDS to real-world scenarios.

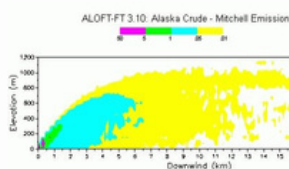
Selected EnviroComp Combustion Projects



BioLab Fire



TOSCO-Carson Refinery Fire

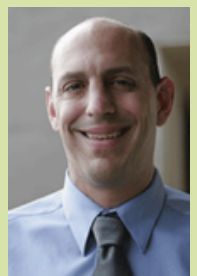


Arts St. Fire in New Orleans, LA

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Testimonials from
EnviroComp clients