An adjoint approach for determining sensitivity of laminar flames
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involve a large number of parameters including chemical rate coefficients and species
diffusivities. When comparing such simulations to experimental data, it becomes
essential to know the relative impact of each of these parameters on the target
quantity. For problems that involve a small number of simulation targets and a large
number of parameters, adjoint-based sensitivity analysis is highly efficient. In this
work, we develop the continuous adjoint equations for a laminar flame configuration,
and provide a numerical algorithm for the solution of the dual problem. Simulations
of a hydrogen flame are used to test this new approach. Key results pertaining to
model validation are discussed.

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