The questions I still have and the answers to them

November 22, 2021

Abstract

1 Questions with Answers

Question At what pressures do the incompressible, inviscid, thermally non-conductive Euler Equations work?

Answer

Question To apply Godunov's method on a system of equations we need only determine $q^{\downarrow}(q_l, q_r)$, the state along $x/t = 0$ based on the Riemann data q_l and q_r. What does this mean?

Answer The RP centered at $x_{i-1/2}$ has a similarity solution that is constant along rays $(x - x_{i-1/2})/(t - t_n) =$ constant, and looking at the value along $(x - x_{i-1/2})/t = 0$ gives the piecewise constant reconstruction value, $q^n(x_{i-1/2}, t)$.

Question What is a similarity solution $U(x/t)$?

Answer The solution to a conservation is a similarity solution that is a function of x/t alone and is self-similar at different times.

Question What is meant by a perturbation to the system?

Answer This would involve anything outside of equilibrium. Por ejemplo think of a calm pond and then the perturbation would be a rock thrown into it.

Question **Answer**