

# Implementation of Newton's Method in High Order Schemes for Steady State Problems

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## **Abstract**

High order discontinuous Galerkin discretization schemes are considered for steady state problems. We discuss the issue of oscillations arising when Newton's method is applied to obtain a steady state solution. It is shown that flux approximation near flux extrema may produce spurious oscillations propagating over the computational domain. The control over the numerical flux in the problem allows us to obtain non-oscillating convergent solutions.