

Development of a Spectral-Element code

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Using Legendre polynomials on a Gauss-Lobatto quadrature.

$$P_n(x) = \frac{2n-1}{n}xP_{n-1}(x) - (n-1)P_{n-2}(x)$$

$$P'_n(x) = -(2n-1)P_{n-1}(x) + P'_{n-2}(x)$$

where $P'_0(x) = 0$ and $P'_1(x) = 1$