求解的方程为

in (1)

(2)

令 , 以及 , 将方程（1）乘以 并在 上积分:

(3)

注意到左边第一项积分，使用分部积分有：

从而

(4)

将在所构成的空间上分解： ，将(4)带入（3）中即有, 对, 不妨设为

Let , , ,

Then , where

Let come with the details about calculating those matrices.

For simplicity, we use modal based DG first. Using , with normalization such that

1. Index of basis
2. Calculate

Where , by orthogonal property of ,

1. Calculate

We need to separate calculate of into three parts.

And

1. Calculate

First we need to define numerical flux and

We need to separate calculate of into six parts