# Same order in space and time

## Space 1 Time 1

| N | Absolute | Relative |
|---|---|---|
| 20 | 0.461 | 0.461 |
| 40 | 0.690 | 0.690 |
| 80 | 0.834 | 0.834 |
| 160 | 0.915 | 0.915 |
| 320 | 0.957 | 0.957 |
| 640 | 0.978 | 0.978 |

## Space 2 Time 2

| N | Absolute | Relative |
|---|---|---|
| 20 | 2.223 | 2.241 |
| 40 | 2.074 | 2.079 |
| 80 | 2.020 | 2.021 |
| 160 | 2.005 | 2.005 |
| 320 | 2.001 | 2.001 |

## Space 3 Time 3

| N | Absolute | Relative |
|---|---|---|
| 20 | 2.997 | 2.997 |
| 40 | 2.999 | 2.999 |

| N | Absolute | Relative |
| --- | --- | --- |
| 80 | 3.000 | 3.000 |
| 160 | 3.000 | 3.000 |

## Space 4 Time 4

| N | Absolute | Relative |
| --- | --- | --- |
| 20 | 4.000 | 4.000 |
| 40 | 4.000 | 4.000 |
| 80 | 4.000 | 4.000 |
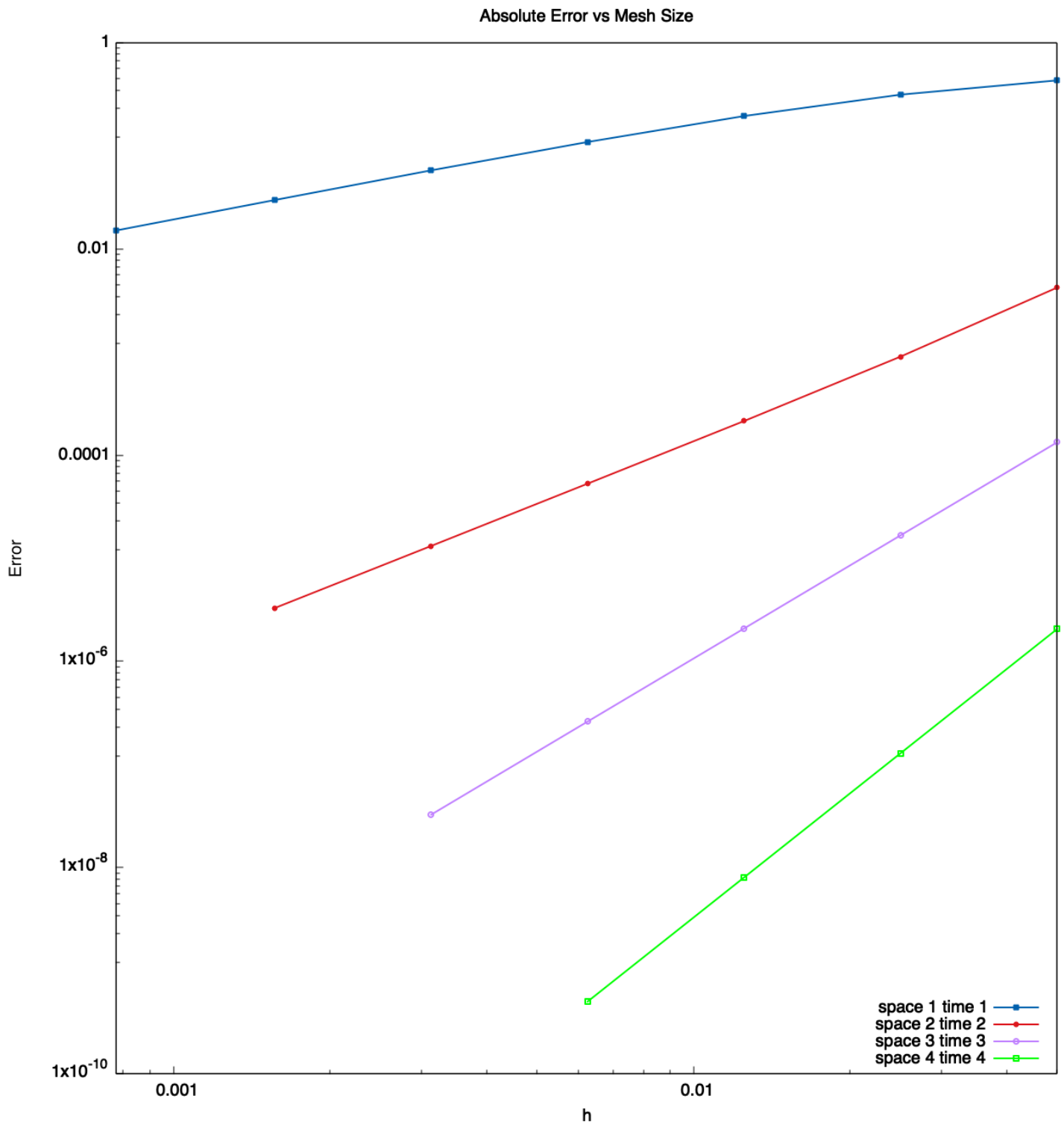
**Variable order in time, 3rd order in space**

Absolute Error vs Mesh Size