|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Analytical Solution | Explicit Upwind FTBS | Implicit Upwind FTBS | Lax-Wendroff | Implicit FTCS | Length |
| 0 | 100 | 100 | 100 | 100 | 100 | 80 |
| 0.1 | 100 | 91.7668 | 78.8866 | 99.535 | 91.4634 | 105 |
| 0.2 | 100 | 84.2887 | 65.0022 | 101.082 | 85.7725 | 125-130 |
| 0.3 | 100 | 77.8569 | 56.3265 | 102.161 | 78.8386 | 150-155 |
| 0.4 | 100 | 72.4873 | 50.2911 | 101.831 | 73.4475 | 175-180 |
| 0.5 | 100 | 67.9985 | 45.825 | 100.825 | 68.7915 | 200-205 |

Delta t = 0.01

Delta t = 0.02

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Analytical Solution | Explicit Upwind FTBS | Implicit Upwind FTBS | Lax-Wendroff | Implicit FTCS | Length |
| 0 | 100 | 100 | 100 | 100 | 100 | 80 |
| 0.1 | 100 | 100 | 74.7266 | 100 | 85.8484 | 100-105 |
| 0.2 | 100 | 100 | 60.0007 | 100 | 74.5248 | 125-130 |
| 0.3 | 100 | 100 | 50.9865 | 100 | 65.906 | 150-155 |
| 0.4 | 100 | 100 | 45.0449 | 100 | 59.4229 | 175-180 |
| 0.5 | 100 | 100 | 40.7775 | 100 | 54.4737 | 200-205 |

Delta t = 0.005

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Analytical Solution | Explicit Upwind FTBS | Implicit Upwind FTBS | Lax-Wendroff | Implicit FTCS | Length |
| 0 | 100 | 100 | 100 | 100 | 100 | 80 |
| 0.1 | 100 | 87.9603 | 81.5257 | 98.7476 | 94.3135 | 105 |
| 0.2 | 100 | 77.9231 | 68.3671 | 102.901 | 94.0264 | 130 |
| 0.3 | 100 | 70.1915 | 59.7062 | 103.802 | 89.2815 | 150-155 |
| 0.4 | 100 | 64.2349 | 53.6957 | 102.722 | 85.3595 | 175-180 |
| 0.5 | 100 | 59.5208 | 49.1564 | 102.892 | 81.7639 | 200-205 |