

## Verifying streaming part

For velocity  $0i + 0j + 0k$

t = 0	t = 1
0.0 0.15 0.3 0.45 0.6 0.75 0.9 1.05 1.2 1.35	0.0 0.15 0.3 0.45 0.6 0.75 0.9 1.05 1.2 1.35
1.5 <b>1.65</b> 1.8 1.95 2.1 2.25 2.4 2.55 2.7 2.85	1.5 <b>1.65</b> 1.8 1.95 2.1 2.25 2.4 2.55 2.7 2.85
3.0 3.15 3.3 3.45 3.6 3.75 3.9 4.05 4.2 4.35	3.0 3.15 3.3 3.45 3.6 3.75 3.9 4.05 4.2 4.35
4.5 4.65 4.8 4.95 5.1 5.25 5.4 5.55 5.7 5.85	4.5 4.65 4.8 4.95 5.1 5.25 5.4 5.55 5.7 5.85
6.0 6.15 6.3 6.45 6.6 6.75 6.9 7.05 7.2 7.35	6.0 6.15 6.3 6.45 6.6 6.75 6.9 7.05 7.2 7.35
7.5 7.65 7.8 7.95 8.1 8.25 8.4 8.55 8.7 8.85	7.5 7.65 7.8 7.95 8.1 8.25 8.4 8.55 8.7 8.85
9.0 9.15 9.3 9.45 9.6 9.75 9.9 10.05 10.2 10.35	9.0 9.15 9.3 9.45 9.6 9.75 9.9 10.05 10.2 10.35
10.5 10.65 10.8 10.95 11.1 11.25 11.4 <b>11.55</b> 11.7 11.85	10.5 10.65 10.8 10.95 11.1 11.25 11.4 <b>11.55</b> 11.7 11.85
12.0 12.15 12.3 12.45 12.6 12.75 12.9 13.05 13.2 13.35	12.0 12.15 12.3 12.45 12.6 12.75 12.9 13.05 13.2 13.35
13.5 13.65 13.8 13.95 14.1 14.25 14.4 14.55 14.7 14.85	13.5 13.65 13.8 13.95 14.1 14.25 14.4 14.55 14.7 14.85
t = 3	t = 4
0.0 0.15 0.3 0.45 0.6 0.75 0.9 1.05 1.2 1.35	0.0 0.15 0.3 0.45 0.6 0.75 0.9 1.05 1.2 1.35
1.5 <b>1.65</b> 1.8 1.95 2.1 2.25 2.4 2.55 2.7 2.85	1.5 <b>1.65</b> 1.8 1.95 2.1 2.25 2.4 2.55 2.7 2.85
3.0 3.15 3.3 3.45 3.6 3.75 3.9 4.05 4.2 4.35	3.0 3.15 3.3 3.45 3.6 3.75 3.9 4.05 4.2 4.35
4.5 4.65 4.8 4.95 5.1 5.25 5.4 5.55 5.7 5.85	4.5 4.65 4.8 4.95 5.1 5.25 5.4 5.55 5.7 5.85
6.0 6.15 6.3 6.45 6.6 6.75 6.9 7.05 7.2 7.35	6.0 6.15 6.3 6.45 6.6 6.75 6.9 7.05 7.2 7.35
7.5 7.65 7.8 7.95 8.1 8.25 8.4 8.55 8.7 8.85	7.5 7.65 7.8 7.95 8.1 8.25 8.4 8.55 8.7 8.85
9.0 9.15 9.3 9.45 9.6 9.75 9.9 10.05 10.2 10.35	9.0 9.15 9.3 9.45 9.6 9.75 9.9 10.05 10.2 10.35
10.5 10.65 10.8 10.95 11.1 11.25 11.4 <b>11.55</b> 11.7 11.85	10.5 10.65 10.8 10.95 11.1 11.25 11.4 <b>11.55</b> 11.7 11.85
12.0 12.15 12.3 12.45 12.6 12.75 12.9 13.05 13.2 13.35	12.0 12.15 12.3 12.45 12.6 12.75 12.9 13.05 13.2 13.35
13.5 13.65 13.8 13.95 14.1 14.25 14.4 14.55 14.7 14.85	13.5 13.65 13.8 13.95 14.1 14.25 14.4 14.55 14.7 14.85

g value both bolded and green are staying in the same position. Hence streaming correct for this velocity

For velocity  $i + 0j + 0k$

t = 0	t = 1
0.01 0.16 0.31 0.46 0.61 0.76 0.91 1.06 1.21 1.36	1.36 0.01 0.16 0.31 0.46 0.61 0.76 0.91 1.06 1.21
1.51 1.66 1.81 <b>1.96</b> 2.11 2.26 2.41 2.56 2.71 2.86	2.86 1.51 1.66 1.81 <b>1.96</b> 2.11 2.26 2.41 2.56 2.71
3.01 3.16 3.31 3.46 3.61 3.76 3.91 4.06 4.21 4.36	4.36 3.01 3.16 3.31 3.46 3.61 3.76 3.91 4.06 4.21
4.51 4.66 4.81 4.96 5.11 5.26 5.41 5.56 5.71 5.86	5.86 4.51 4.66 4.81 4.96 5.11 5.26 5.41 5.56 5.71
6.01 6.16 6.31 6.46 6.61 <b>6.76</b> 6.91 7.06 7.21 7.36	7.36 6.01 6.16 6.31 6.46 6.61 <b>6.76</b> 6.91 7.06 7.21
7.51 7.66 7.81 7.96 8.11 8.26 8.41 8.56 8.71 8.86	8.86 7.51 7.66 7.81 7.96 8.11 8.26 8.41 8.56 8.71
9.01 9.16 9.31 9.46 9.61 9.76 9.91 10.06 10.21 10.36	10.36 9.01 9.16 9.31 9.46 9.61 9.76 9.91 10.06 10.21
10.51 10.66 10.81 10.96 11.11 11.26 11.41 11.56 11.71 11.86	11.86 10.51 10.66 10.81 10.96 11.11 11.26 11.41 11.56 11.71
12.01 12.16 12.31 12.46 12.61 12.76 12.91 13.06 13.21 13.36	13.36 12.01 12.16 12.31 12.46 12.61 12.76 12.91 13.06 13.21
13.51 13.66 13.81 13.96 14.11 14.26 14.41 14.56 14.71 14.86	14.86 13.51 13.66 13.81 13.96 14.11 14.26 14.41 14.56 14.71
t = 2	t = 3
1.21 1.36 0.01 0.16 0.31 0.46 0.61 0.76 0.91 1.06	1.06 1.21 1.36 0.01 0.16 0.31 0.46 0.61 0.76 0.91
2.71 2.86 1.51 1.66 1.81 <b>1.96</b> 2.11 2.26 2.41 2.56	2.56 2.71 2.86 1.51 1.66 1.81 <b>1.96</b> 2.11 2.26 2.41
4.21 4.36 3.01 3.16 3.31 3.46 3.61 3.76 3.91 4.06	4.06 4.21 4.36 3.01 3.16 3.31 3.46 3.61 3.76 3.91
5.71 5.86 4.51 4.66 4.81 4.96 5.11 5.26 5.41 5.56	5.56 5.71 5.86 4.51 4.66 4.81 4.96 5.11 5.26 5.41
7.21 7.36 6.01 6.16 6.31 6.46 6.61 <b>6.76</b> 6.91 7.06	7.06 7.21 7.36 6.01 6.16 6.31 6.46 6.61 <b>6.76</b> 6.91
8.71 8.86 7.51 7.66 7.81 7.96 8.11 8.26 8.41 8.56	8.56 8.71 8.86 7.51 7.66 7.81 7.96 8.11 8.26 8.41
10.21 10.36 9.01 9.16 9.31 9.46 9.61 9.76 9.91 10.06	10.06 10.21 10.36 9.01 9.16 9.31 9.46 9.61 9.76 9.91
11.71 11.86 10.51 10.66 10.81 10.96 11.11 11.26 11.41 11.56	11.56 11.71 11.86 10.51 10.66 10.81 10.96 11.11 11.26 11.41
13.21 13.36 12.01 12.16 12.31 12.46 12.61 12.76 12.91 13.06	13.06 13.21 13.36 12.01 12.16 12.31 12.46 12.61 12.76 12.91
14.71 14.86 13.51 13.66 13.81 13.96 14.11 14.26 14.41 14.56	14.56 14.71 14.86 13.51 13.66 13.81 13.96 14.11 14.26 14.41

The bolded number **1.96** and **6.76** are each moving one place towards right as expected

For velocity  $\mathbf{i} + \mathbf{j} + \mathbf{k}$

Note that positive  $y$  direction is downwards

$t = 0$

0.07 0.22 0.37 0.52 0.67 0.82 0.97 1.12 1.27 1.42  
1.57 1.72 1.87 2.02 2.17 2.32 2.47 2.62 **2.77** 2.92  
3.07 3.22 3.37 3.52 3.67 3.82 3.97 4.12 4.27 4.42  
4.57 4.72 4.87 5.02 5.17 5.32 5.47 5.62 5.77 5.92  
6.07 **6.22** 6.37 6.52 6.67 6.82 6.97 7.12 7.27 7.42  
7.57 7.72 7.87 8.02 8.17 8.32 8.47 8.62 8.77 8.92  
9.07 9.22 9.37 9.52 9.67 9.82 9.97 10.12 10.27 10.42  
10.57 10.72 10.87 11.02 11.17 11.32 11.47 11.62 11.77 11.92  
12.07 12.22 12.37 12.52 12.67 12.82 12.97 13.12 13.27 13.42  
13.57 13.72 13.87 14.02 14.17 14.32 14.47 14.62 14.77 14.92

$t = 2$

13.27 13.42 12.07 12.22 12.37 12.52 12.67 12.82 12.97 13.12  
14.77 14.92 13.57 13.72 13.87 14.02 14.17 14.32 14.47 14.62  
1.27 1.42 0.07 0.22 0.37 0.52 0.67 0.82 0.97 1.12  
**2.77** 2.92 1.57 1.72 1.87 2.02 2.17 2.32 2.47 2.62  
4.27 4.42 3.07 3.22 3.37 3.52 3.67 3.82 3.97 4.12  
5.77 5.92 4.57 4.72 4.87 5.02 5.17 5.32 5.47 5.62  
7.27 7.42 6.07 **6.22** 6.37 6.52 6.67 6.82 6.97 7.12  
8.77 8.92 7.57 7.72 7.87 8.02 8.17 8.32 8.47 8.62  
10.27 10.42 9.07 9.22 9.37 9.52 9.67 9.82 9.97 10.12  
11.77 11.92 10.57 10.72 10.87 11.02 11.17 11.32 11.47 11.62

$t = 1$

14.92 13.57 13.72 13.87 14.02 14.17 14.32 14.47 14.62 14.77  
1.42 0.07 0.22 0.37 0.52 0.67 0.82 0.97 1.12 1.27  
2.92 1.57 1.72 1.87 2.02 2.17 2.32 2.47 2.62 **2.77**  
4.42 3.07 3.22 3.37 3.52 3.67 3.82 3.97 4.12 4.27  
5.92 4.57 4.72 4.87 5.02 5.17 5.32 5.47 5.62 5.77  
7.42 6.07 **6.22** 6.37 6.52 6.67 6.82 6.97 7.12 7.27  
8.92 7.57 7.72 7.87 8.02 8.17 8.32 8.47 8.62 8.77  
10.42 9.07 9.22 9.37 9.52 9.67 9.82 9.97 10.12 10.27  
11.92 10.57 10.72 10.87 11.02 11.17 11.32 11.47 11.62 11.77  
13.42 12.07 12.22 12.37 12.52 12.67 12.82 12.97 13.12 13.27

$t = 3$

11.62 11.77 11.92 10.57 10.72 10.87 11.02 11.17 11.32 11.47  
13.12 13.27 13.42 12.07 12.22 12.37 12.52 12.67 12.82 12.97  
14.62 14.77 14.92 13.57 13.72 13.87 14.02 14.17 14.32 14.47  
1.12 1.27 1.42 0.07 0.22 0.37 0.52 0.67 0.82 0.97  
2.62 **2.77** 2.92 1.57 1.72 1.87 2.02 2.17 2.32 2.47  
4.12 4.27 4.42 3.07 3.22 3.37 3.52 3.67 3.82 3.97  
5.62 5.77 5.92 4.57 4.72 4.87 5.02 5.17 5.32 5.47  
7.12 7.27 7.42 6.07 **6.22** 6.37 6.52 6.67 6.82 6.97  
8.62 8.77 8.92 7.57 7.72 7.87 8.02 8.17 8.32 8.47  
10.12 10.27 10.42 9.07 9.22 9.37 9.52 9.67 9.82 9.97

It can be seen that each  $g$  is moving one step ahead in both  $x$  and  $y$  axis. Here length in  $z$  axis is only one