

```

/* Send data to left, get data from right */
42. MPI_Sendrecv(h_left_boundary, num_halo_points, MPI_FLOAT,
    left_neighbor, i, h_right_halo,
    num_halo_points, MPI_FLOAT, right_neighbor, i,
    MPI_COMM_WORLD, &status );
/* Send data to right, get data from left */
43. MPI_Sendrecv(h_right_boundary, num_halo_points, MPI_FLOAT,
    right_neighbor, i, h_left_halo,
    num_halo_points, MPI_FLOAT, left_neighbor, i,
    MPI_COMM_WORLD, &status );

44. cudaMemcpyAsync(d_output+left_halo_offset, h_left_halo,
    num_halo_bytes, cudaMemcpyHostToDevice, stream0);
45. cudaMemcpyAsync(d_output+right_ghost_offset, h_right_ghost,
    num_halo_bytes, cudaMemcpyHostToDevice, stream0 );
46. cudaDeviceSynchronize();

47. float *temp = d_output;
48. d_output = d_input; d_input = temp;
}

```