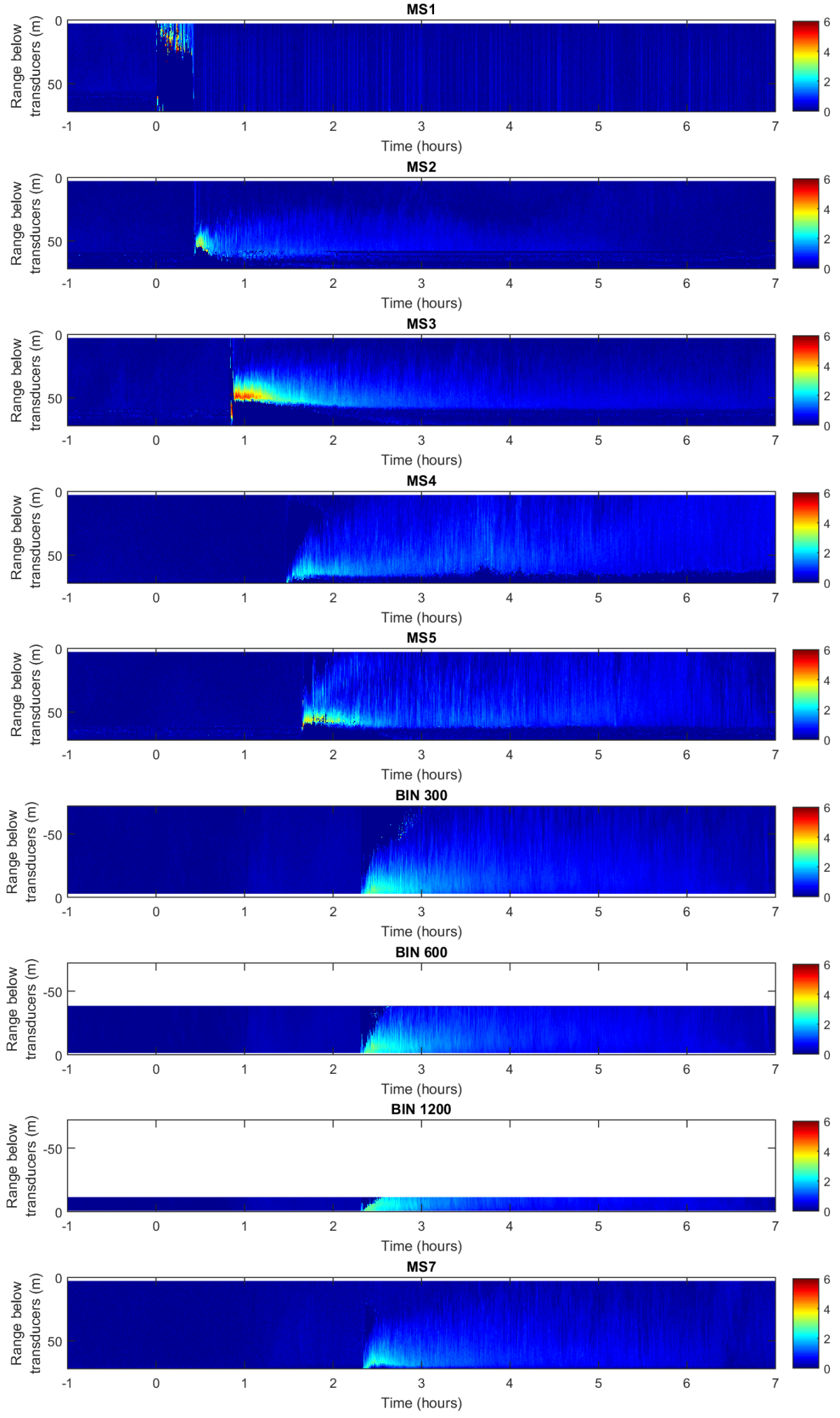
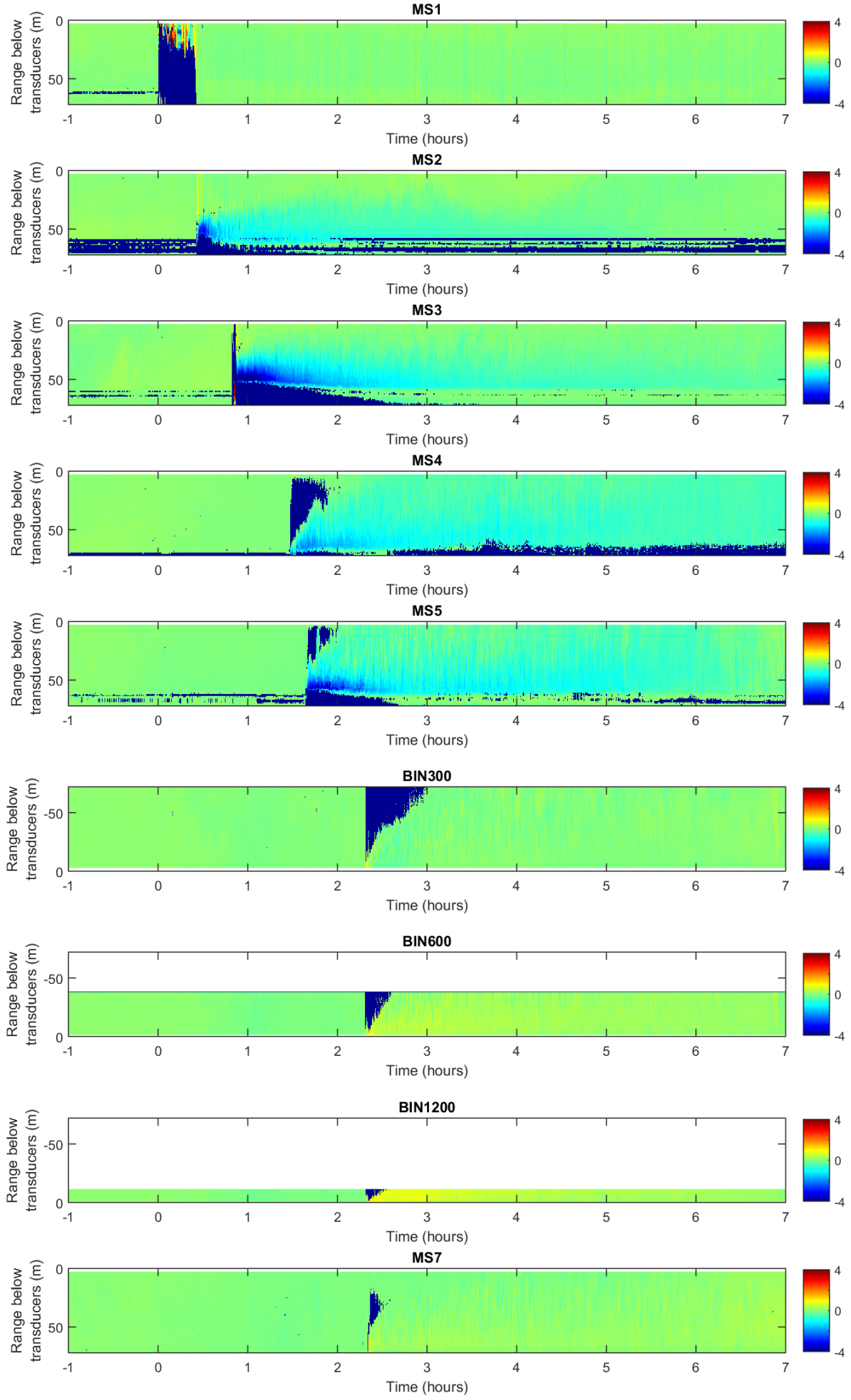
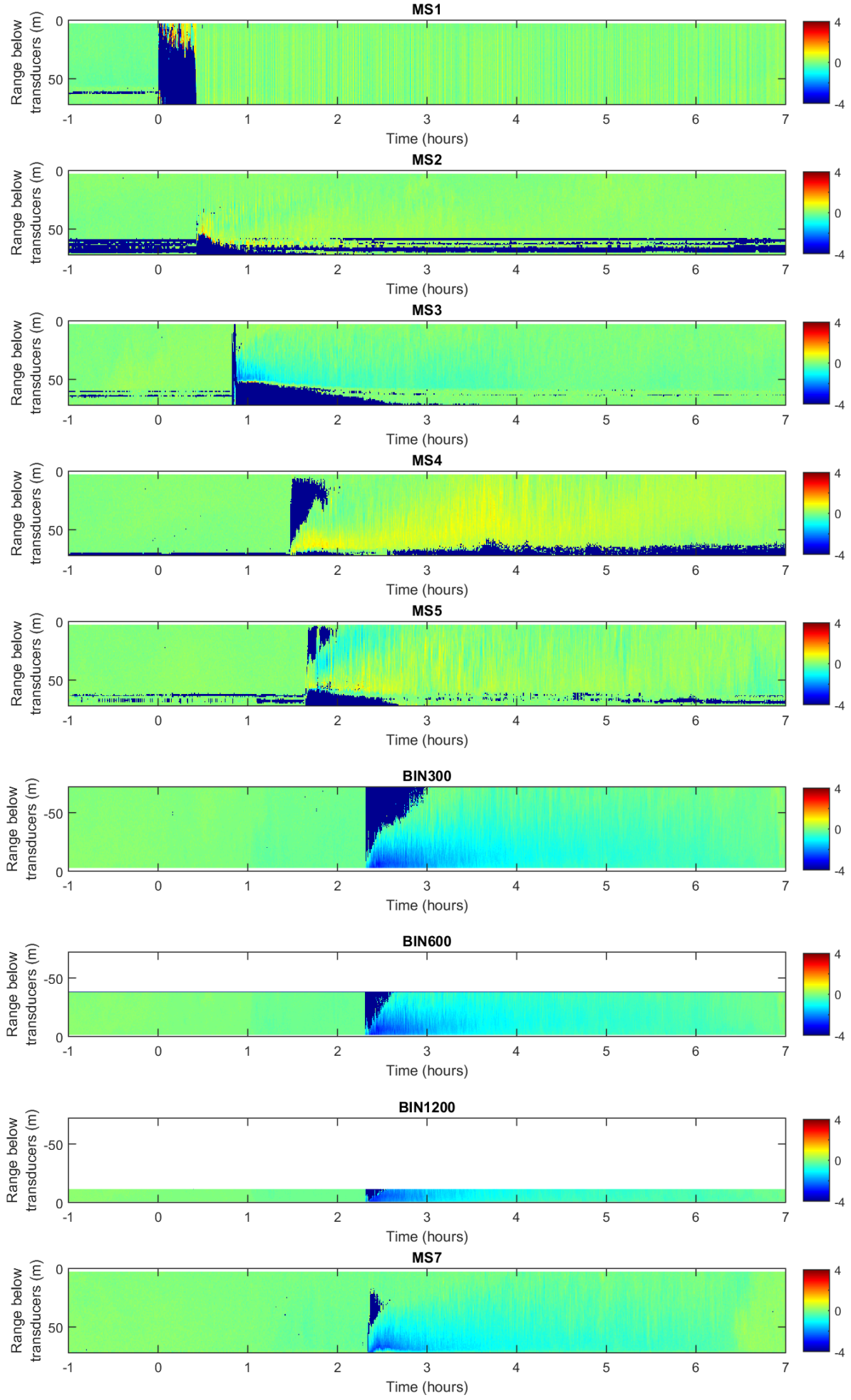
Velocity Magnitude (m/s) – Jan 15



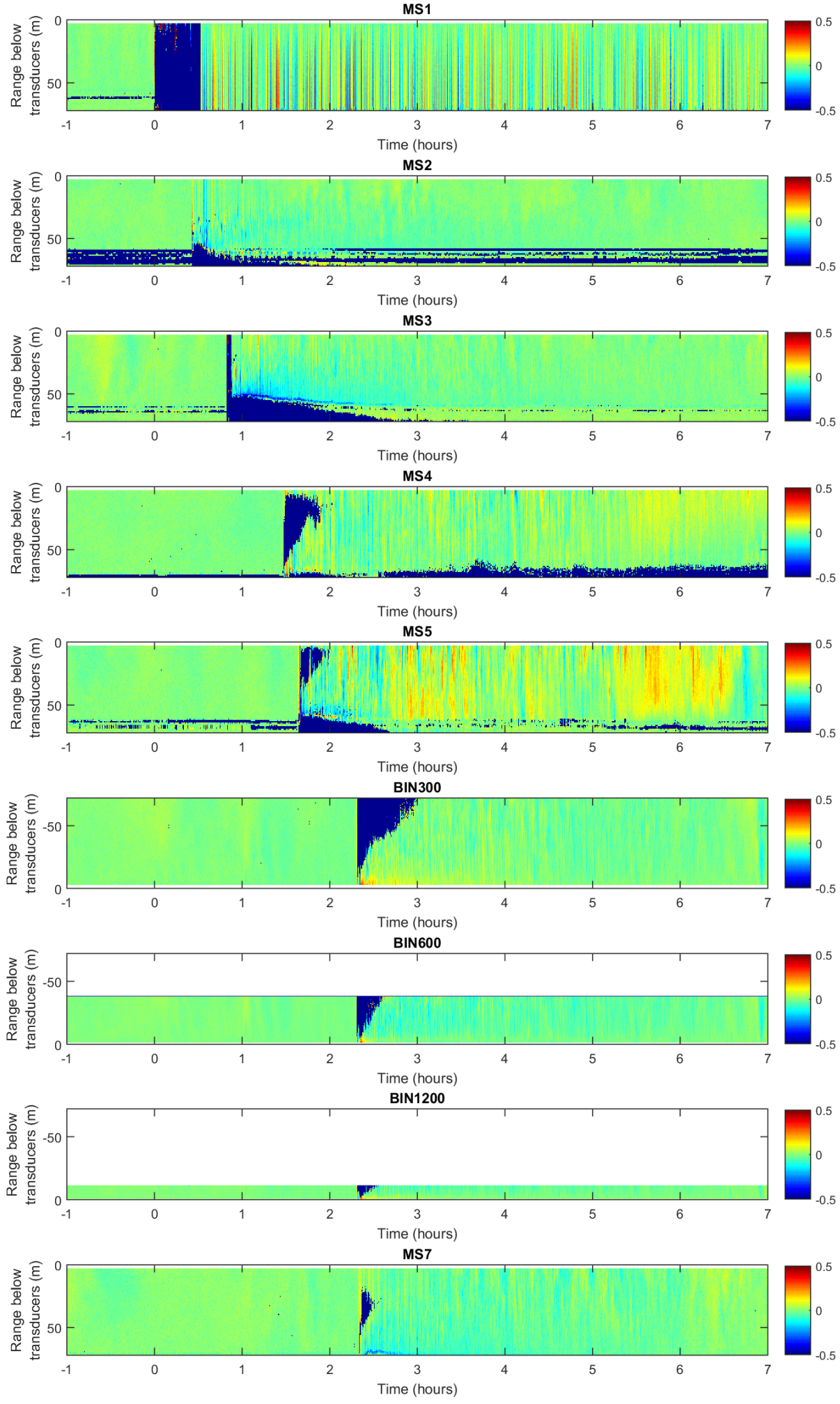
Speed North (m/s) – Jan 15



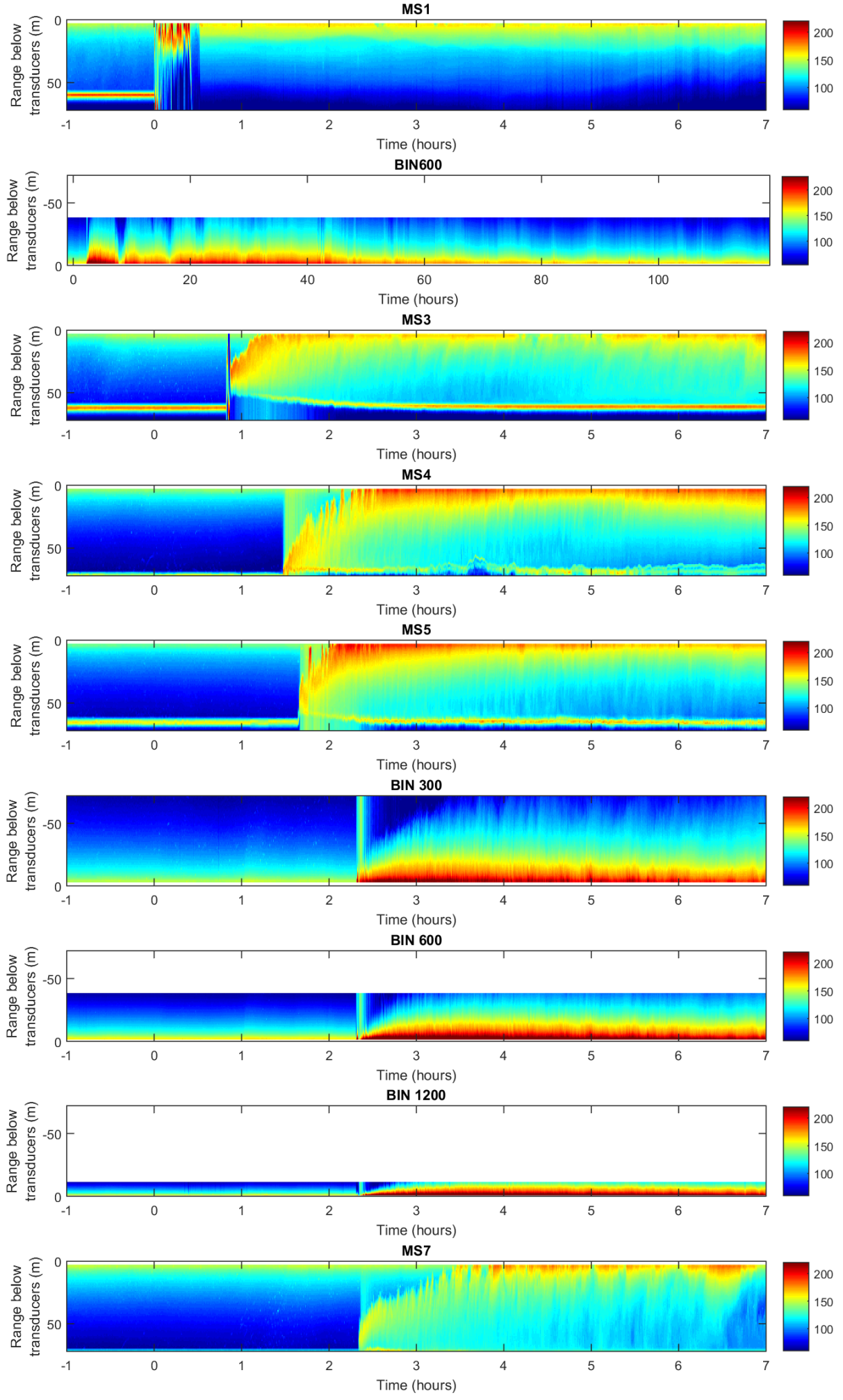
Speed East (m/s) – Jan 15



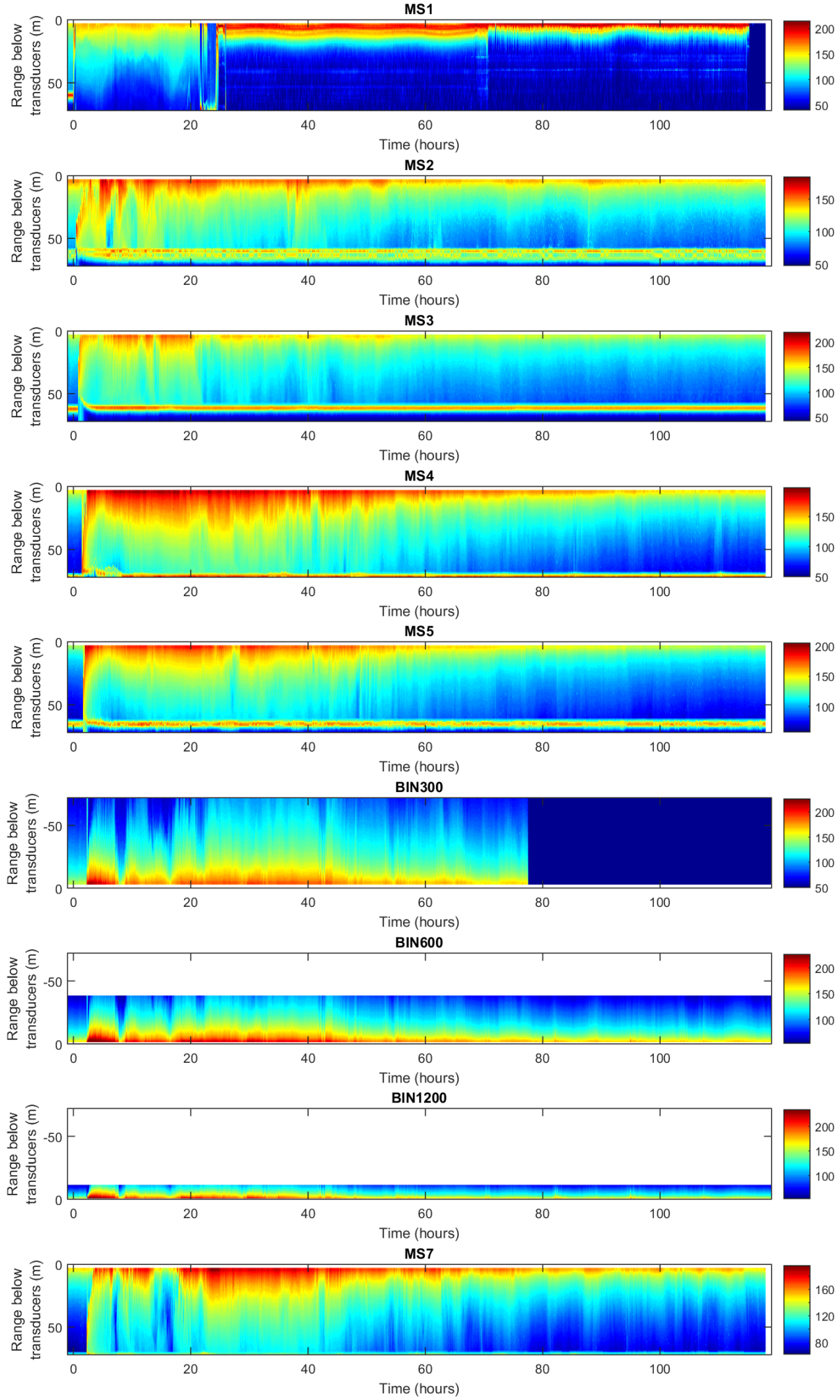
Speed Vertical (m/s) – Jan 15

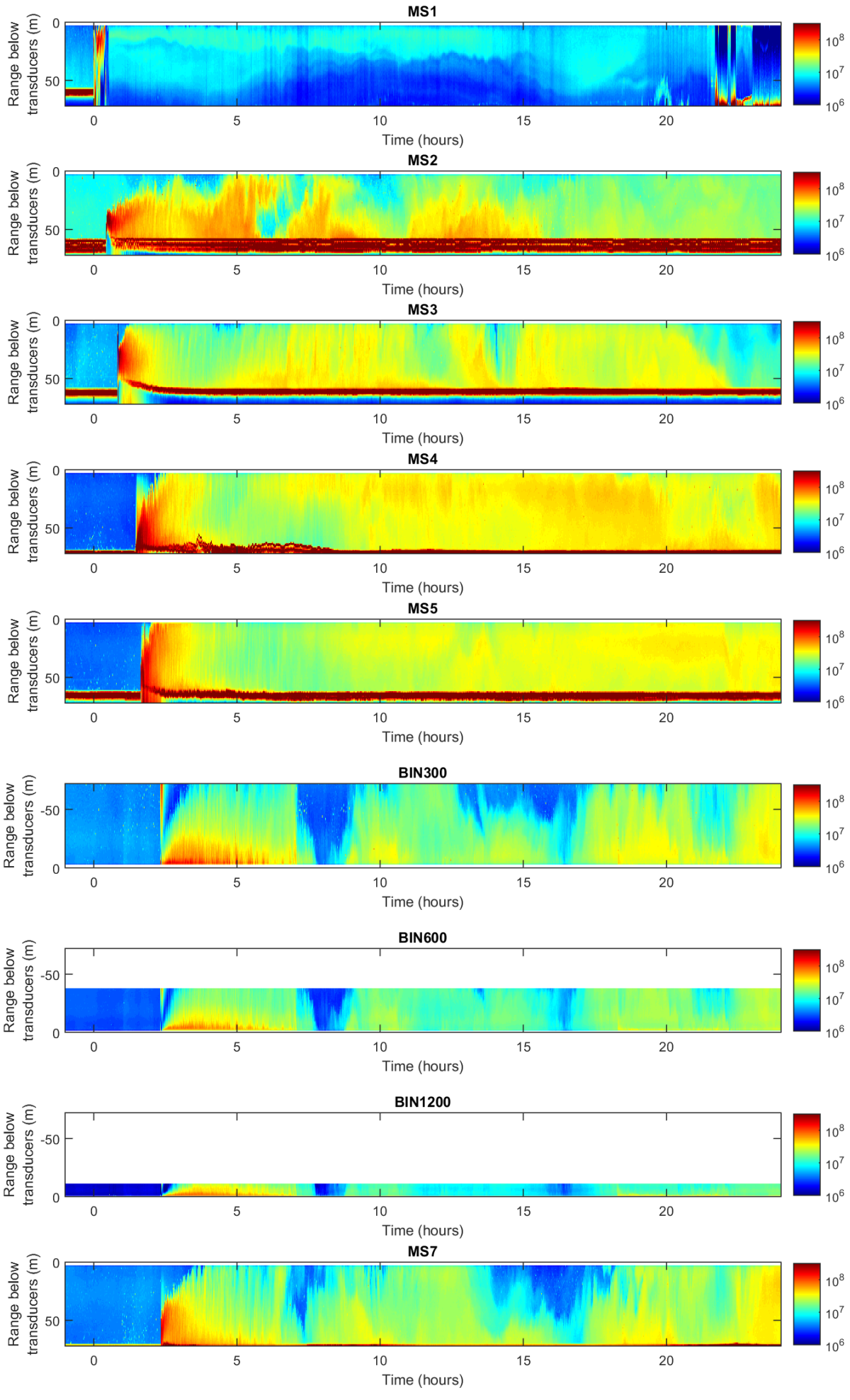


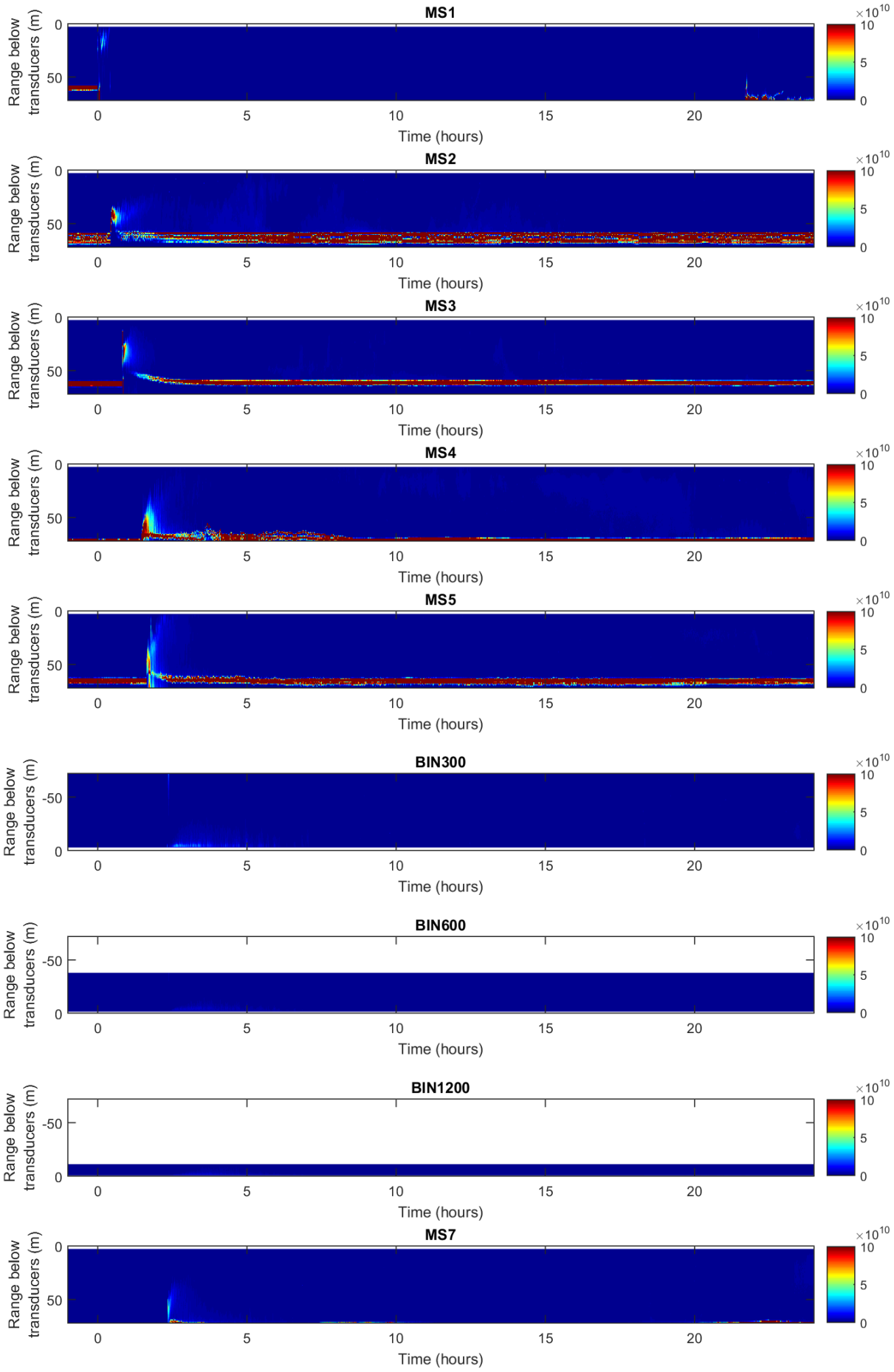
Echo amplitude averaged over four beams – Jan 15



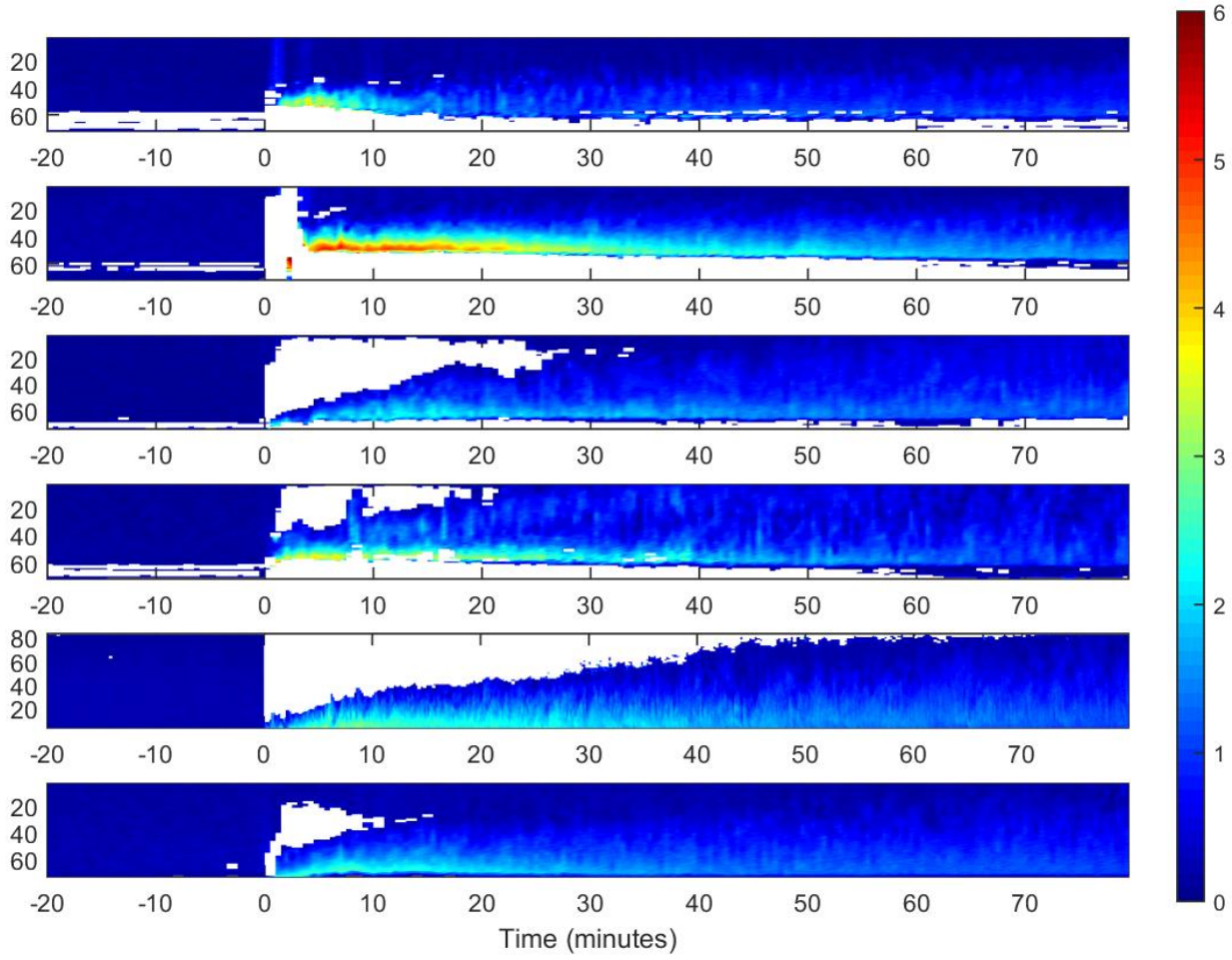
Echo amplitude averaged over four beams – Jan 15



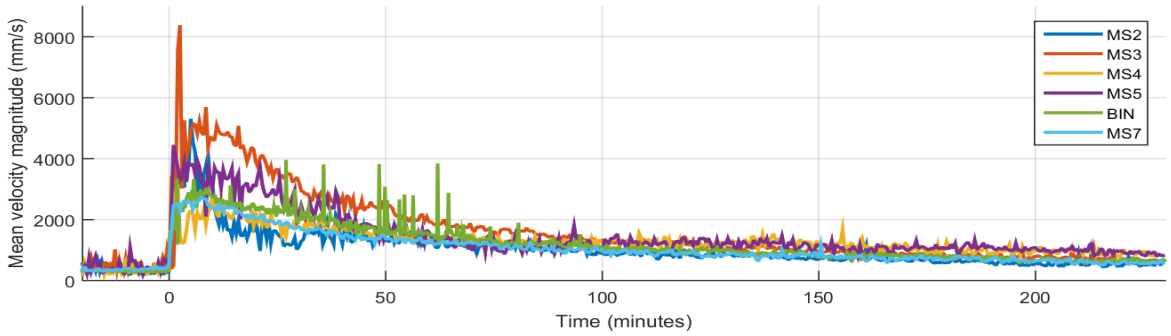

MS1
MS2
MS3
MS4
MS5
BIN300
BIN600
BIN1200
MS7
Range below transducers (m)
Time (hours)
0
5
10
15
20
50
-50
10^8
10^7
10^6


MS1
MS2
MS3
MS4
MS5
BIN300
BIN600
BIN1200
MS7
Range below transducers (m)
Time (hours)
0
5
10
15
20
50
-50
×10^10

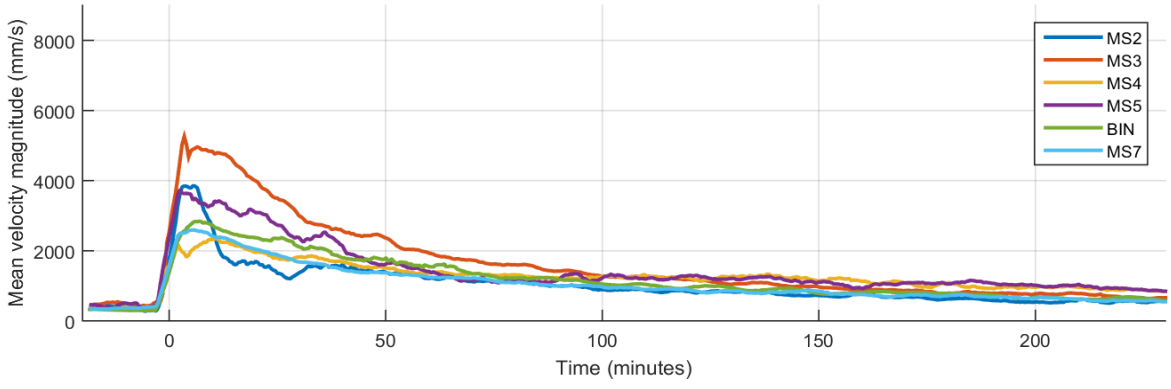
Velocity magnitude plots for all 300kHz ADCPs for the Jan 15th event aligned with t=0 at the event arrival for each location:



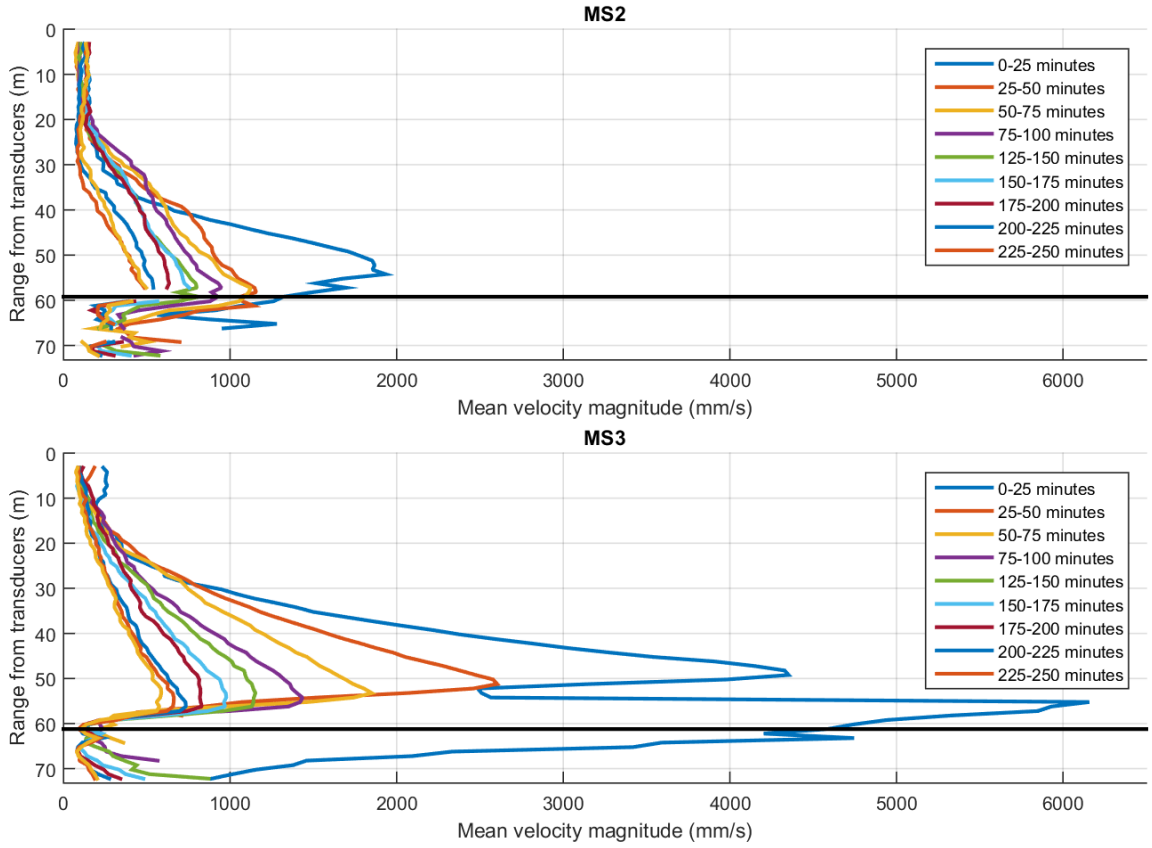
Velocity magnitude maximum for all 300kHz ADCPs aligned to start of flow at each location:

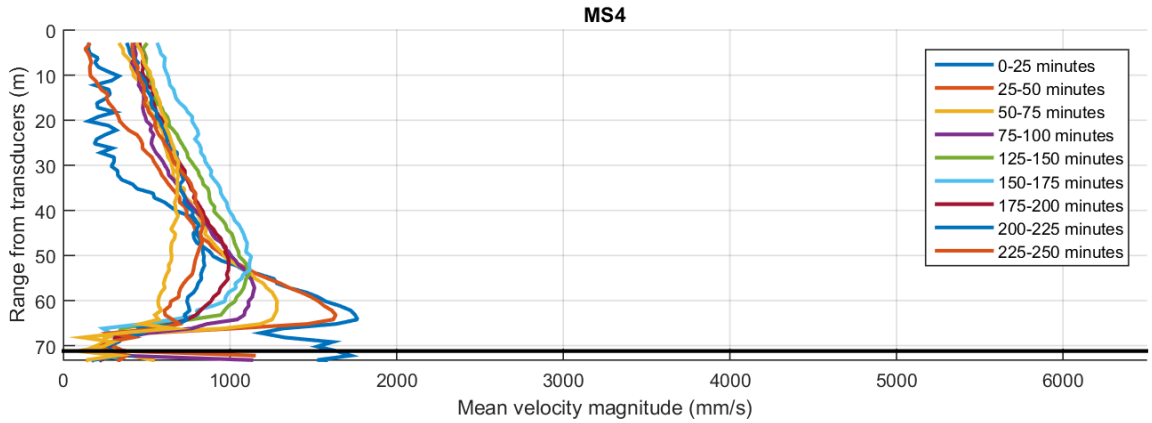


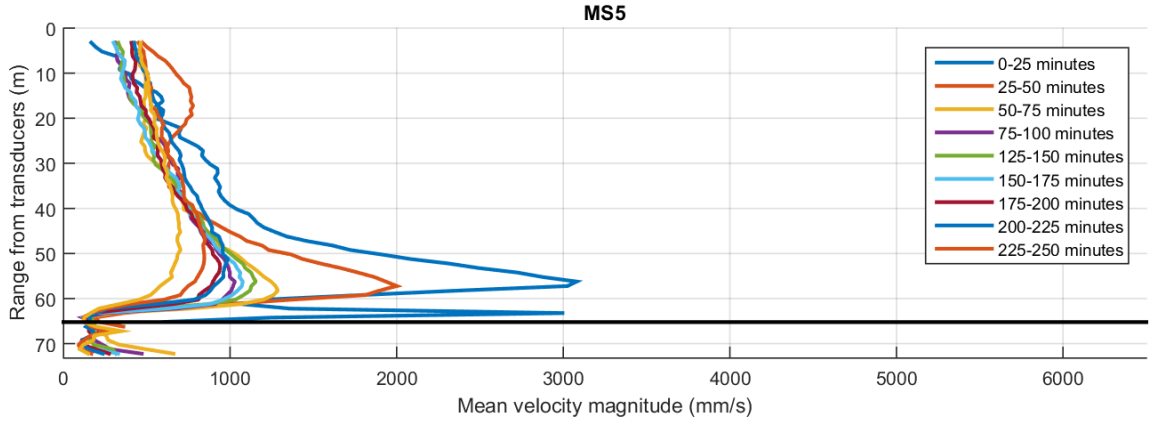
As above but with moving average of 5 minutes applied:

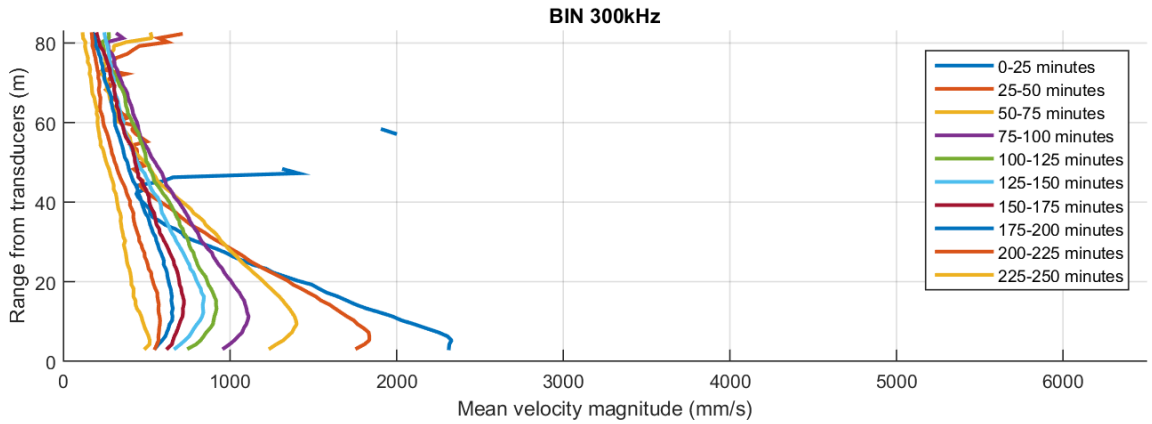


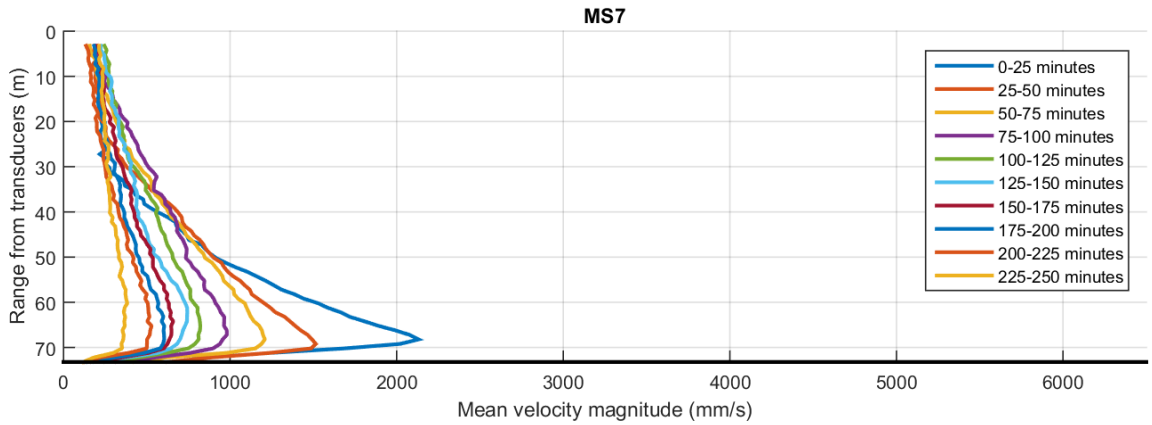
The plots below show vertical profiles averaged over periods of 25 minutes from the arrival of the flow event at that location. The horizontal black line shows the approximate location of the bed, however, variations due to ADCP motion have not yet been taken into account. MS2 has a particularly uneven bathymetry so the bed varies between the black line and a further range. All the mooring plots are affected by sidelobes in the 2-3 m above the bed giving poor velocity values in the region below the velocity maximum, with the exception of MS7 where higher levels of backscatter near the bed enable more accurate velocity values down to the bed throughout the 250 minutes. The large spike in MS3 in the first 25 minutes is probably caused by large, sudden changes in magnitudes of the pitch and roll angle that can't be measured or taken into account by the instrument. The velocity maximum is more likely to be between 4000 to 5000 mm/s. The upper portion of some of the upward looking BIN ADCP data shows erroneous large values due to the high sediment attenuation in the early stages of the flow. MS7 has the best quality velocity data.




MS4
Range from transducers (m)
Mean velocity magnitude (mm/s)
0-25 minutes
25-50 minutes
50-75 minutes
75-100 minutes
125-150 minutes
150-175 minutes
175-200 minutes
200-225 minutes
225-250 minutes


MS5
Range from transducers (m)
Mean velocity magnitude (mm/s)
0-25 minutes
25-50 minutes
50-75 minutes
75-100 minutes
125-150 minutes
150-175 minutes
175-200 minutes
200-225 minutes
225-250 minutes


BIN 300kHz
Range from transducers (m)
Mean velocity magnitude (mm/s)
0-25 minutes
25-50 minutes
50-75 minutes
75-100 minutes
100-125 minutes
125-150 minutes
150-175 minutes
175-200 minutes
200-225 minutes
225-250 minutes


MS7
Range from transducers (m)
Mean velocity magnitude (mm/s)
0-25 minutes
25-50 minutes
50-75 minutes
75-100 minutes
100-125 minutes
125-150 minutes
150-175 minutes
175-200 minutes
200-225 minutes
225-250 minutes