Figure 1a

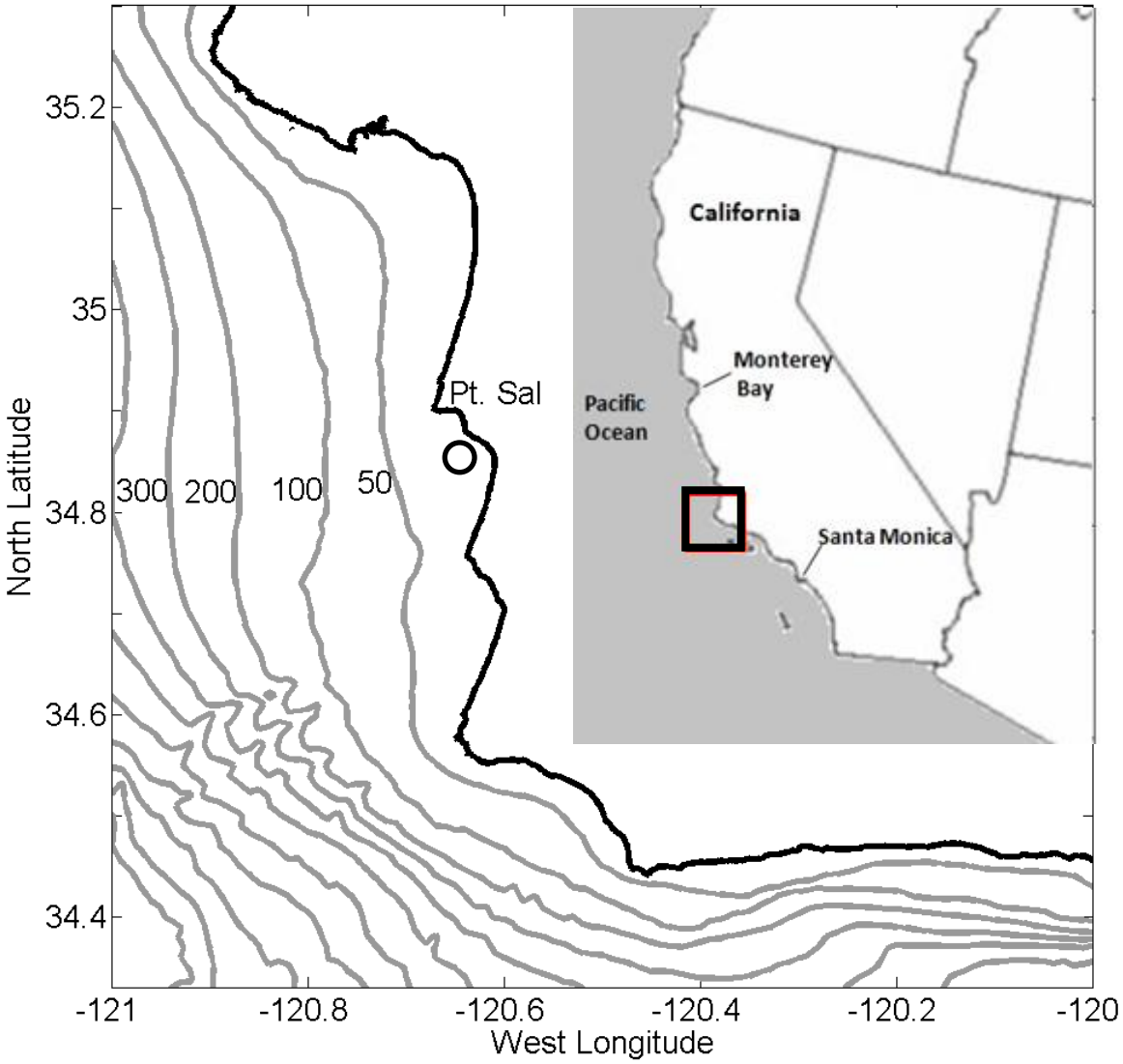


Figure 1a: Map of the study area in California, USA. The black box in the inset shows the approximate study region bounded by gray box. Gray lines indicate bathymetric contours at 50 m and then 100 m increments. The black circle indicates the location of the mooring and gliders.

Figure1b

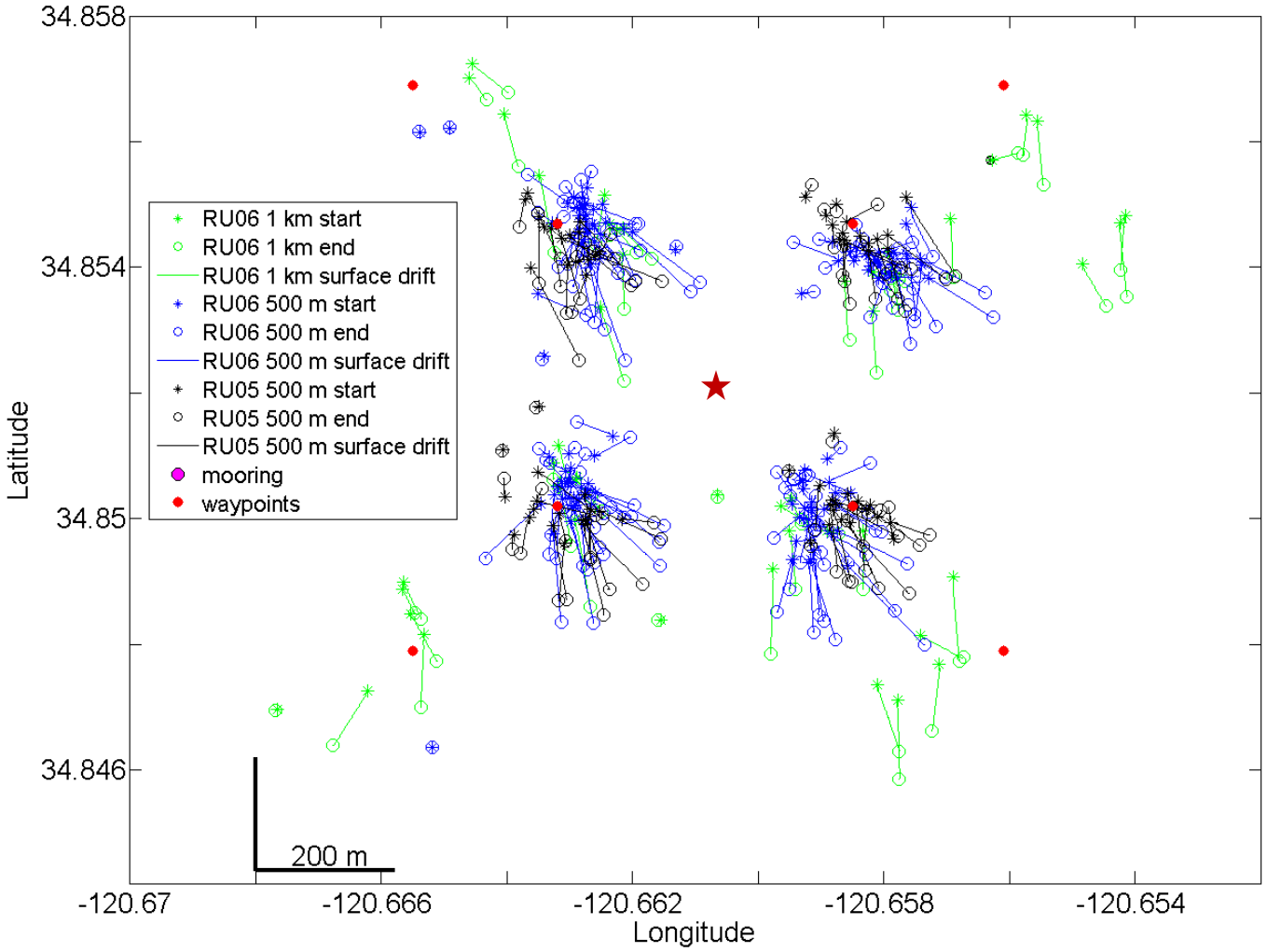


Figure 1b: Map of glider positions with waypoints (filled red circles) and the mooring (red star). The various flight paths are represented by different colors, where green represents the RU06 1km path, blue represents the RU06 500m path, and black represents the RU05 500m path. The lines represent the overall drift of the glider while on the surface and connect the initial GPS position (asterisk) with the final GPS position (open circle) before diving. These lines indicate the direction of surface drift, but do not imply linear drift.

Figure 2

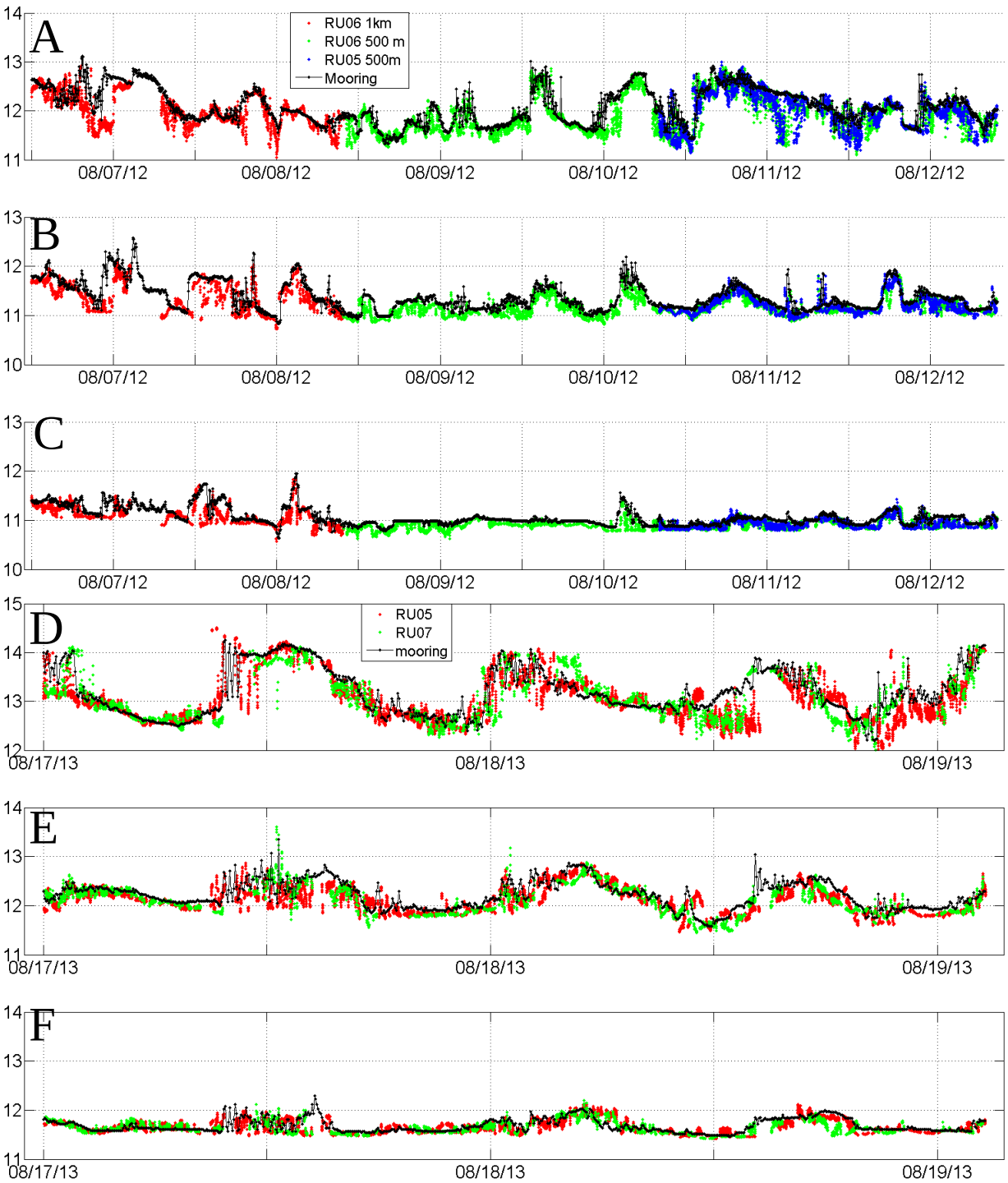


Figure 2: Time series of T(z) observations. In 2012 (panels A-C), RU06 sampled a 1 km box (red), RU06 a 500 m box (green), and RU05 a 500 m box (blue). In 2013 (panels D-F) RU05 (red) and RU07 (green) each sampled a 500 m box. T(z) from moored thermistors are shown as a black curve in all panels. Data are shown at z = 20.4 m (A,D), z= 11.6 m (B, E), and z = 6.7 m (C, F).

Figure 3

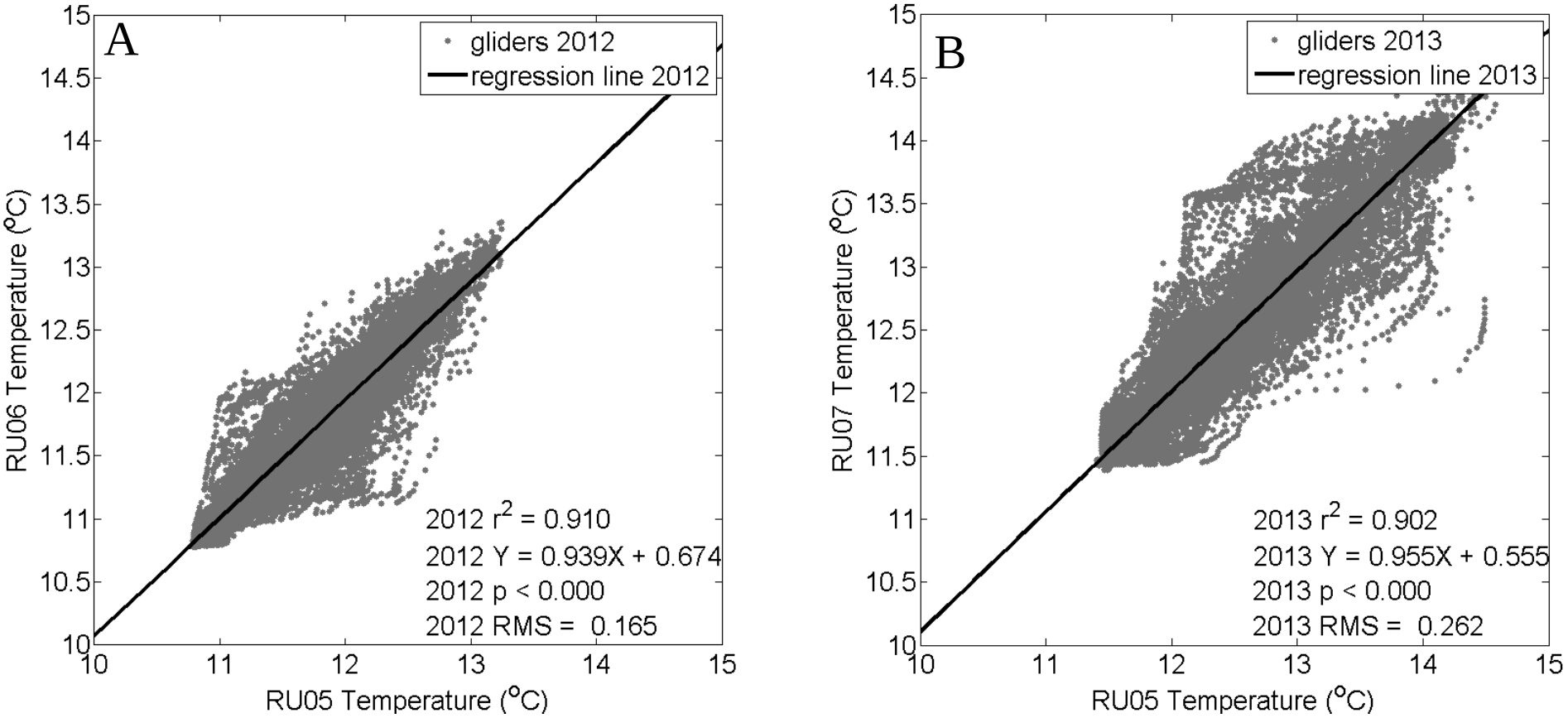


Figure 3: Linear regression of temperatures from gliders (see axis labels) for the period 08/10/12 to 08/12/12 (A) and 08/17/13 to 08/19/13 (B) when the gliders were collocated. Each glider point is found using a "search" window of .25 m and 1 minutes.

Figure 4

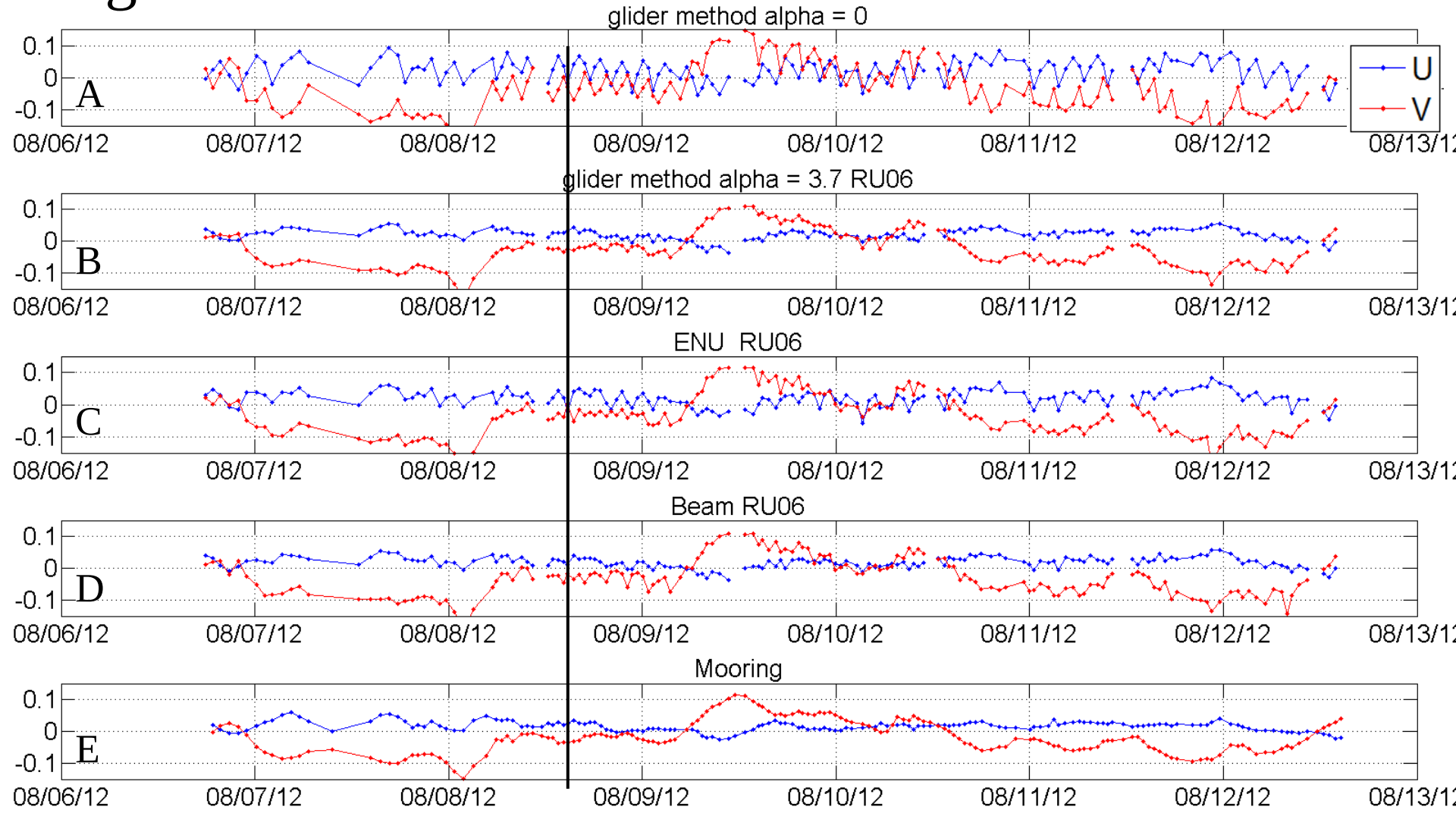


Figure 4: Time series of vertically-averaged velocity (U(t)) in the u (blue) and v (red) directions from the different methods of dead-reckoning position in section 2.4.3. A) "glider" method with α = 0. B) "glider" method with α = 3.7. C) The "ENU" method. D) The "beam" method. E) Currents from the bottom-mounted ADCP averaged over the same time interval as the glider data in panels A-D. The vertical black line indicates the switch from 1 km to 500 m box.

Figure 5

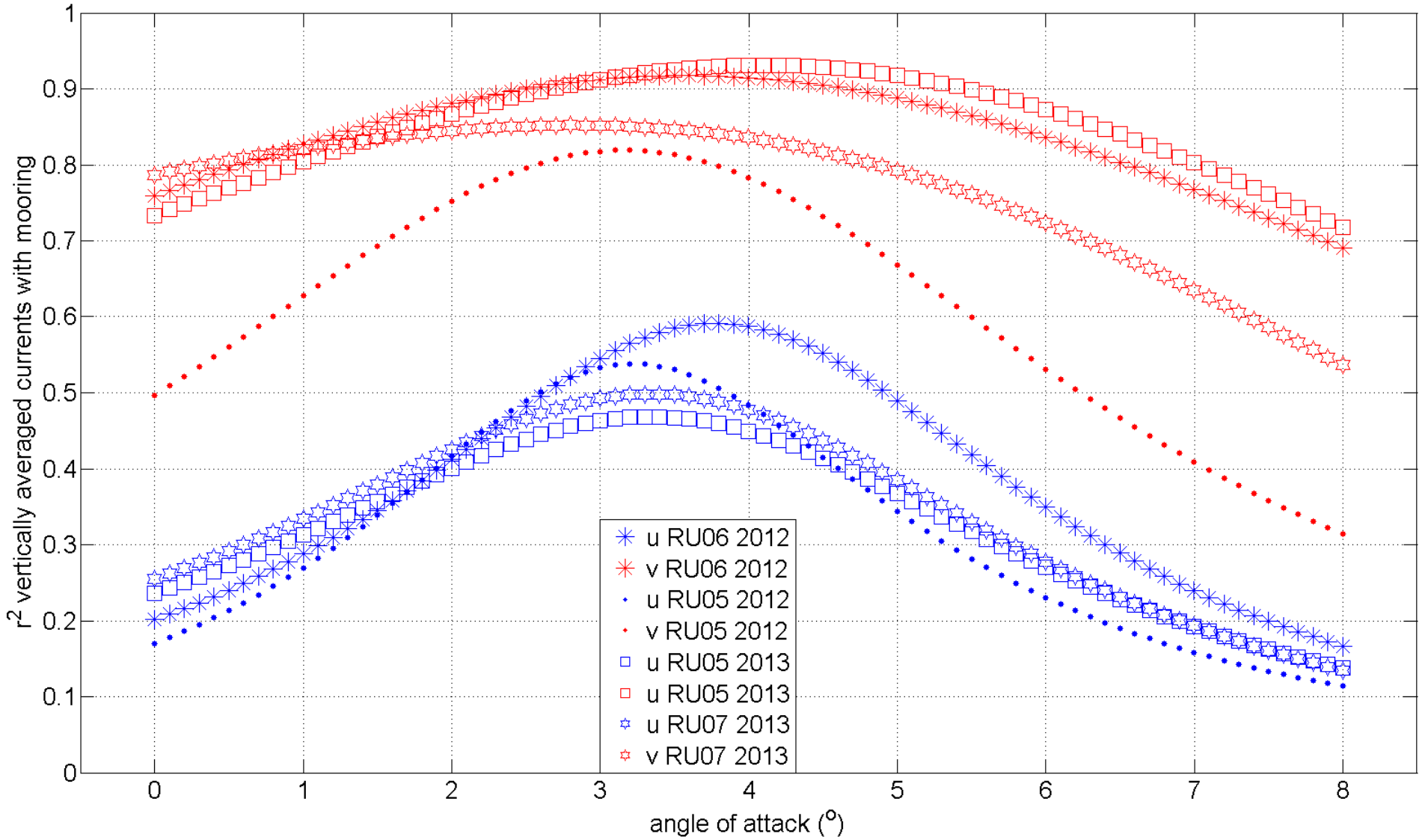


Figure 5: r^2 of vertically averaged velocity from the "glider" method versus vertically averaged velocity from the moor ADCP on the y-axis. Different values of α used in the "glider" method are on the x-axis. Blue shapes indicate r^2 in the U, onshore direction, and red indicate r^2 in the V, alongshore direction. Legend denotes individual deployments

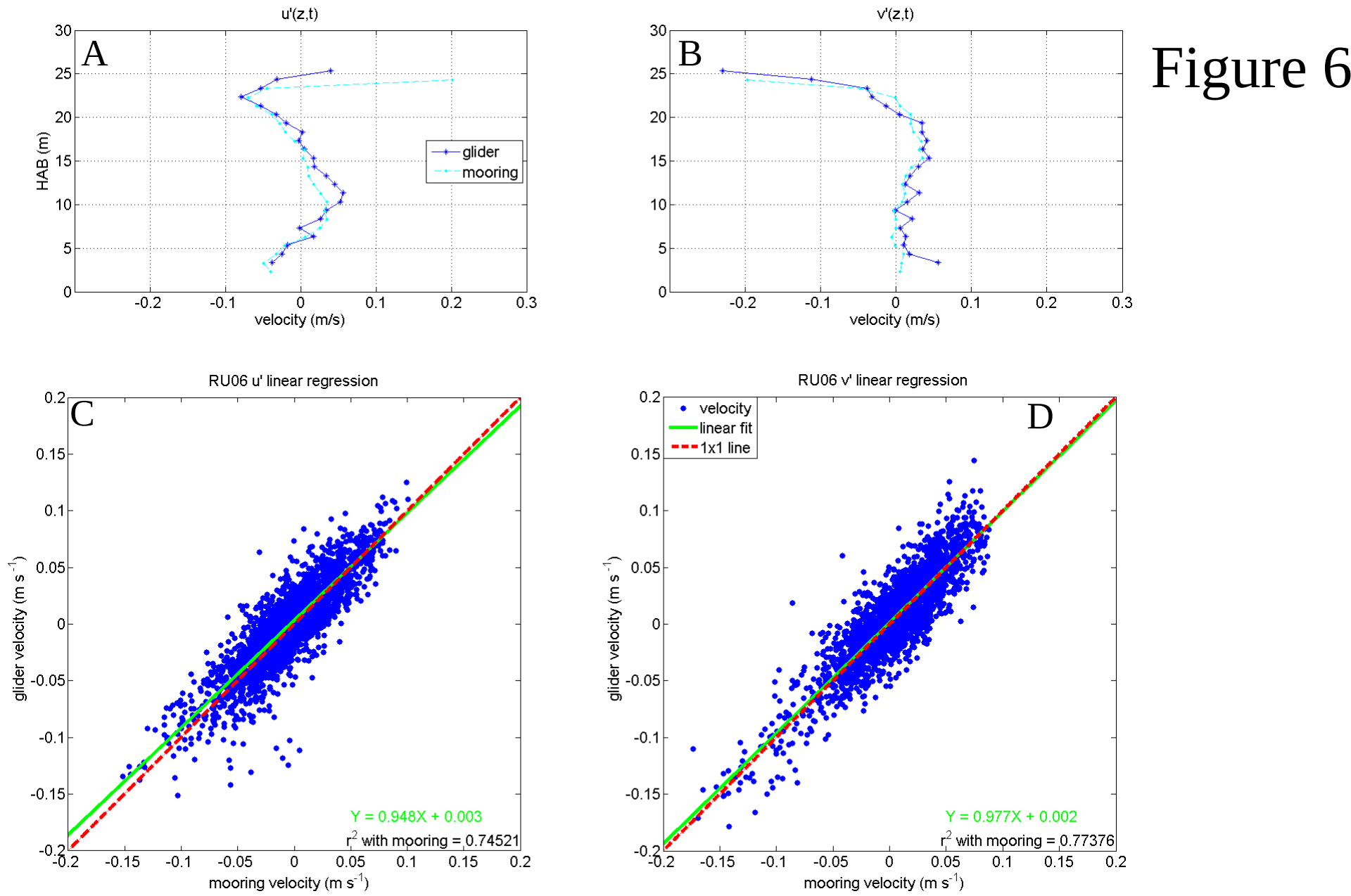


Figure 6

Figure 6: An example vertical profile of u' (A) and v' (B) from the glider ADCP (blue) and the moored ADCP (cyan). Linear regressions of u' (C) and v' (D) for the data during RU06's 500 m flight. Green line is a linear fit, and red line has a slope of 1 for comparison.

Figure 7

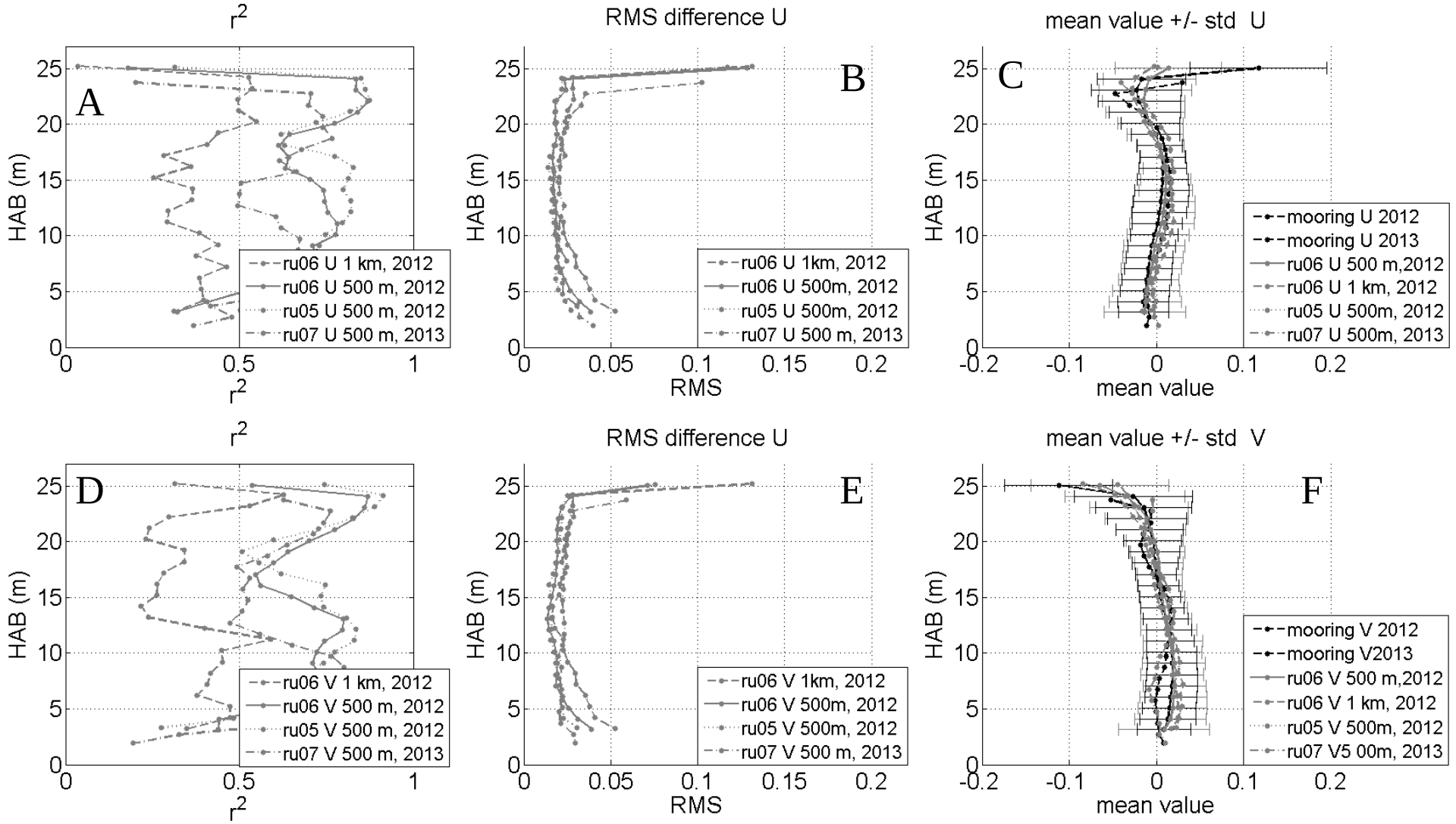


Figure 7: Vertical profiles of r^2 (A), RMS difference (B) and mean value +/- one standard deviation displayed as horizontal error bars (C) of u'(z,t). Vertical profiles of r^2 (D), RMS difference (E) and mean value (F) +/- one standard deviation of v'(z,t) are shown in the bottom row. Standard deviations are very similar between deployments so, for clarity, only one set of error bars for the glider and mooring are shown in C and F.

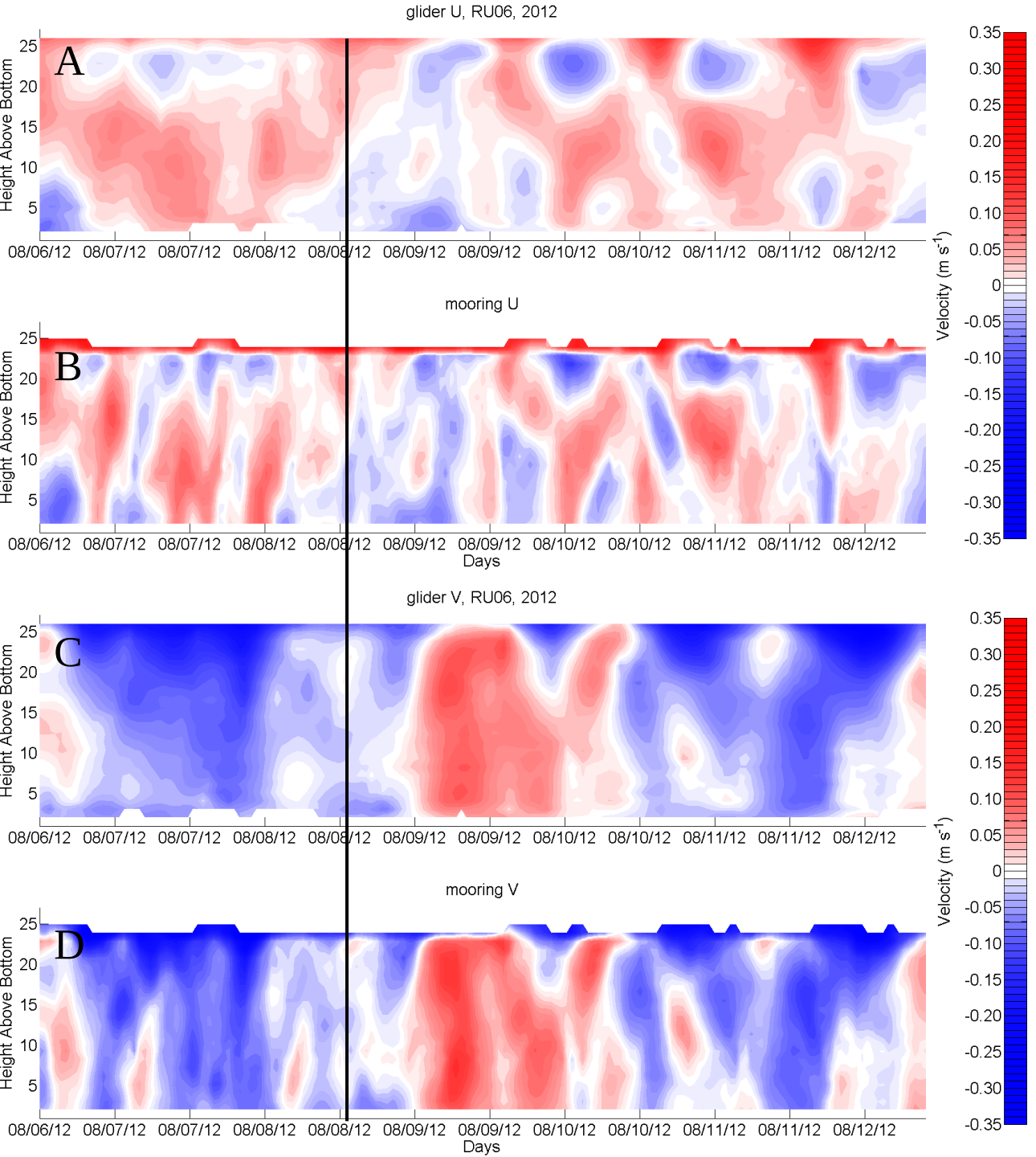


Figure 8

Figure 8: Contour of u(z,t) from the glider RU06 (A) and mooring (B) and v(z,t) from the glider RU06 (C) and mooring (D). Vertical black line indicates shift from 1 km box to 500 m box of glider RU06 in 2012. U and V are positive (red) in the onshore and poleward directions, respectively.

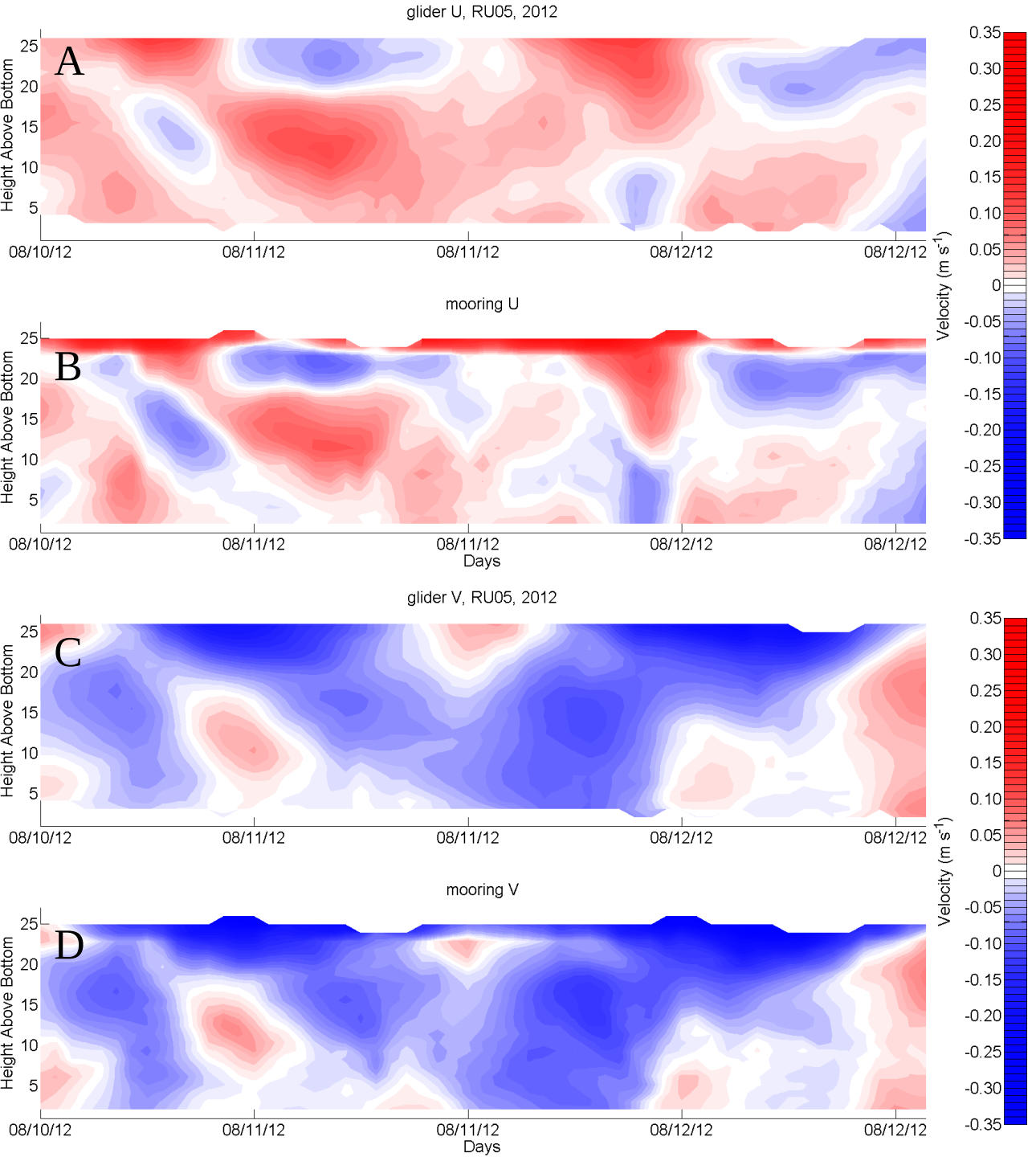


Figure 9

Figure 9: Contour of u(z,t) **from the glider RU05 (A) and mooring (B) and** v(z,t) **from the glider RU05 (C) and mooring (D) in 2012.** U **and** V **are positive (red) in the onshore and poleward directions, respectively.**

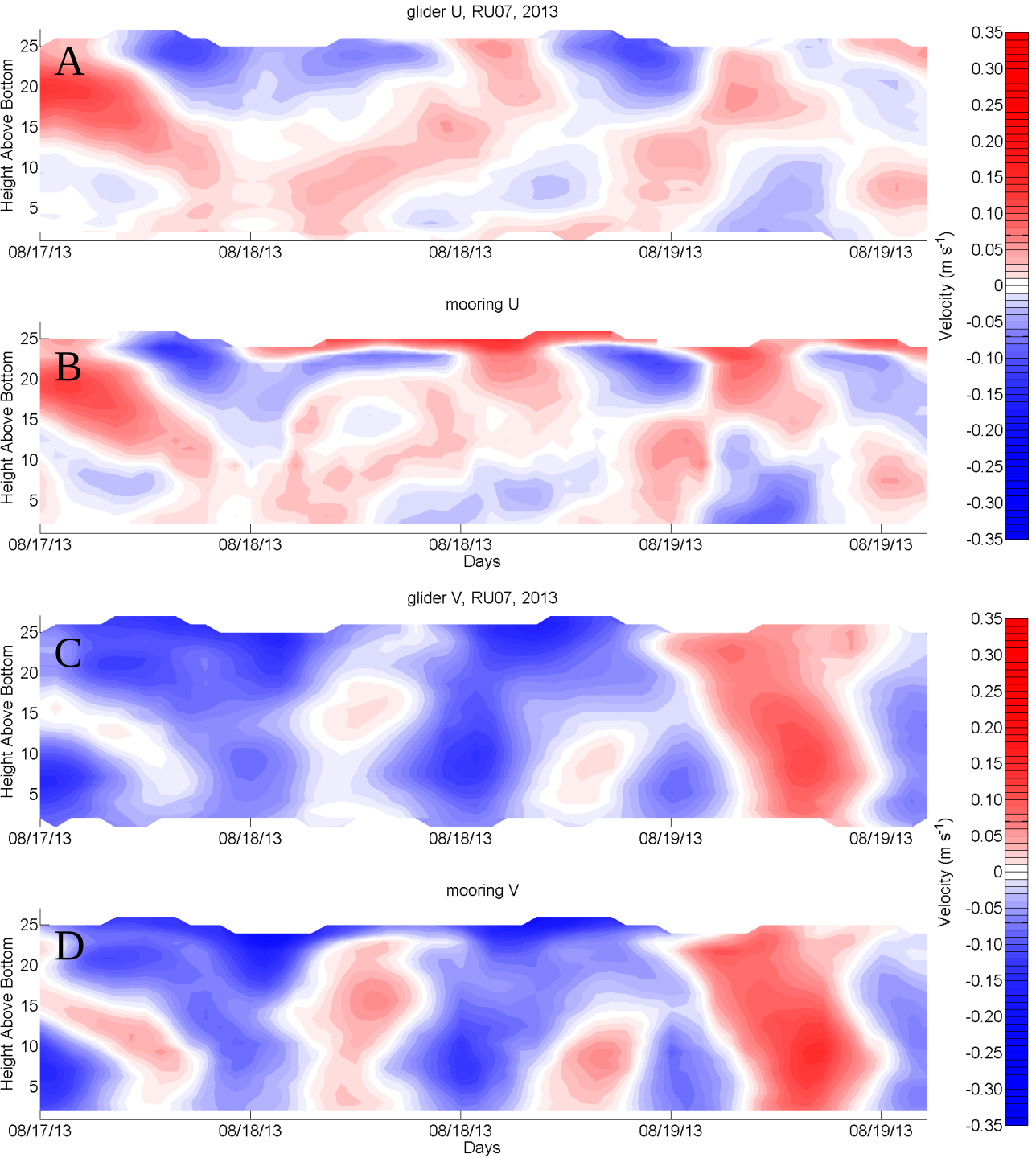


Figure 10

Figure 10: Contour of u(z,t) **from the glider RU07 (A) and mooring (B) and** v(z,t) **from the glider RU07 (C) and mooring (D) in 2013.** U **and** V **are positive (red) in the onshore and poleward directions, respectively.**

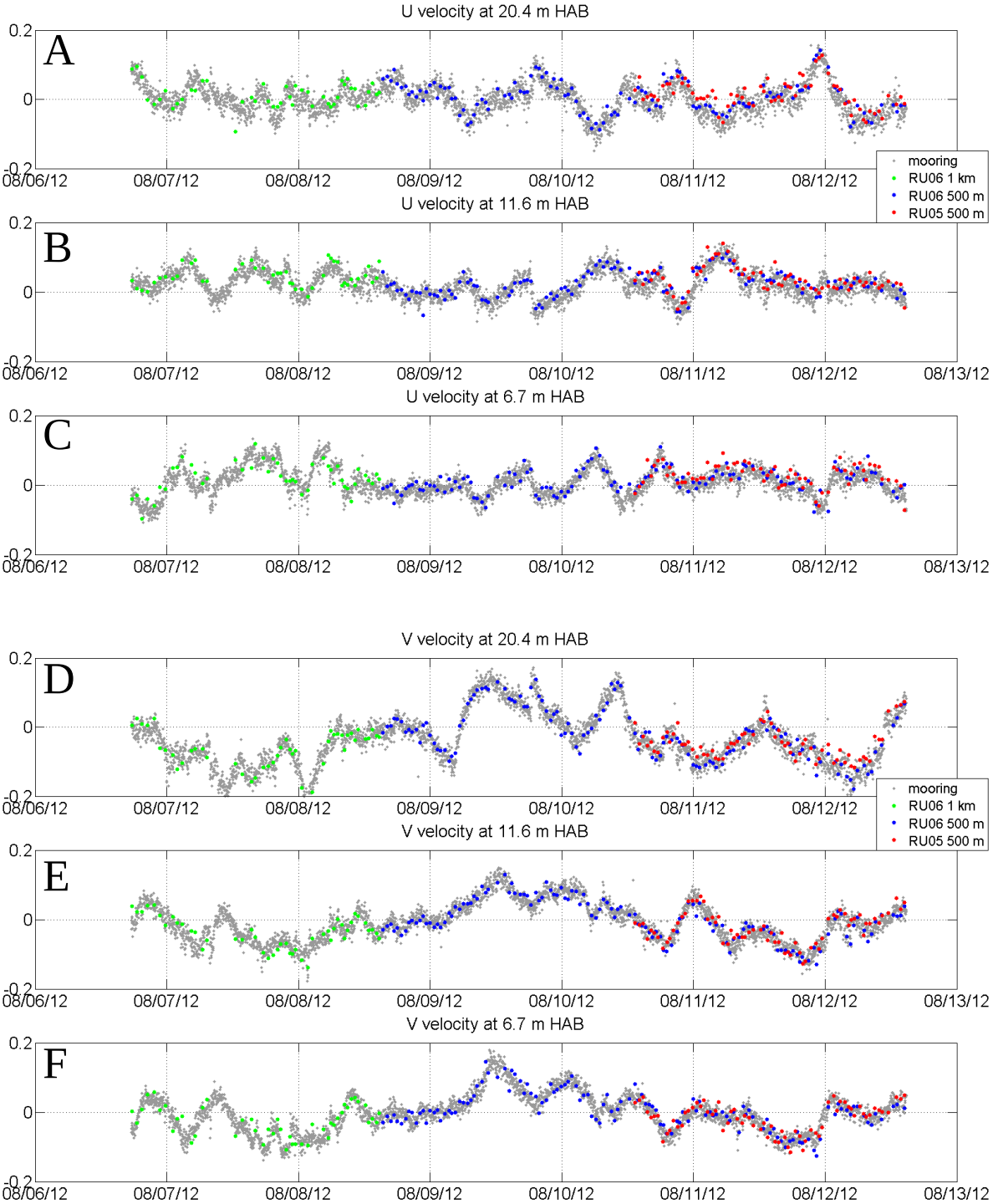


Figure 11

Figure 11: Time series of $u(z,t)$ **(panels A-C) and** $v(z,t)$ **(panels D-F) from the gliders in 2012. RU06 in the 1 km box (green), RU06 in the 500 m box (blue), RU05 in the 500 m box (red) and the data from the moored ADCP (gray) are shown as dots. Panels A and D are at z = 20.4 m HAB; B and E are at z = 11.6 m; C and F are at z = 6.7 m.**

Figure 12

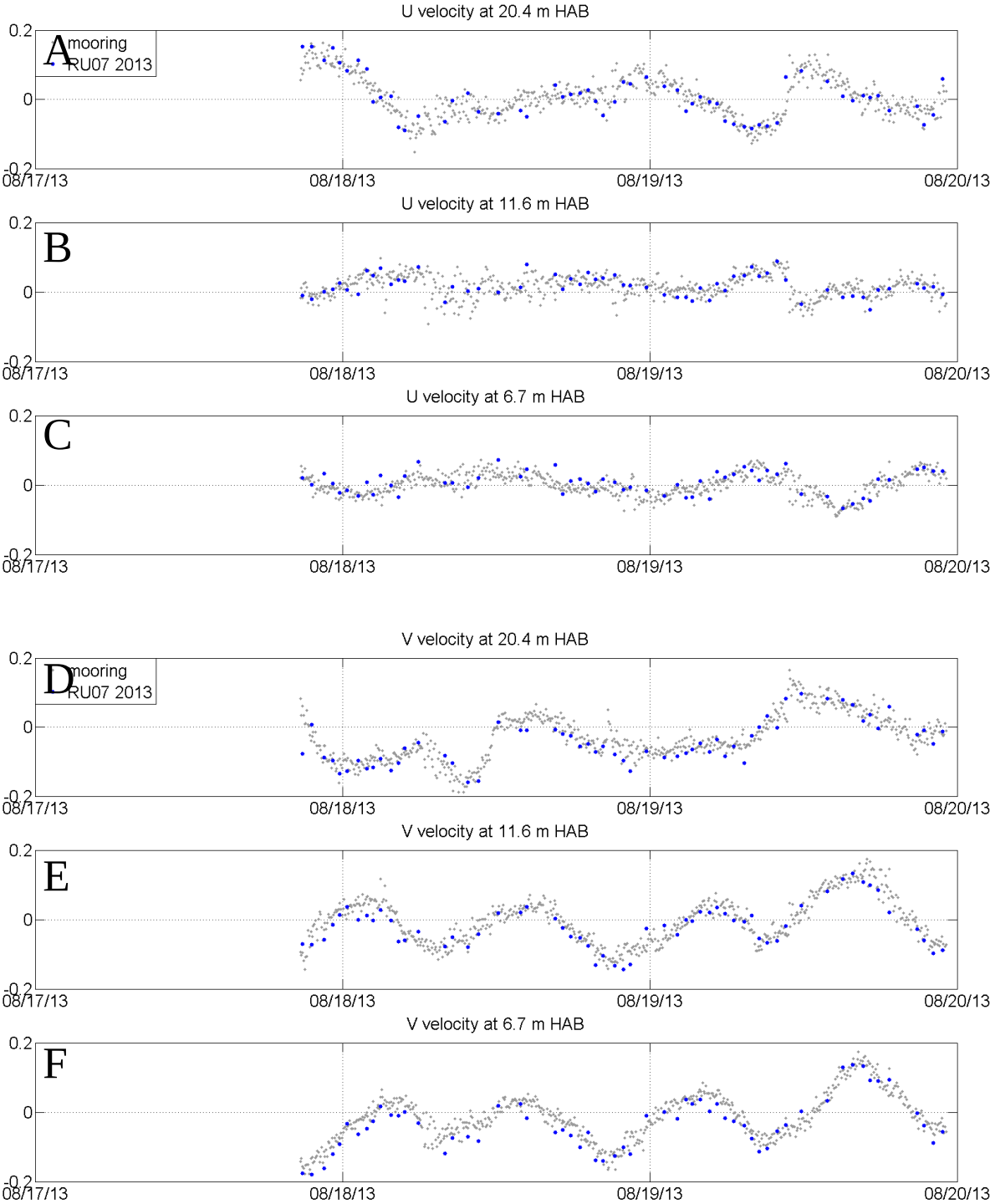


Figure 11: Time series of $u(z,t)$ **(panels A-C) and** $v(z,t)$ **(panels D-F) from the glider in 2013. Data from the moored ADCP (gray) and glider RU07 (blue) are shown as dots. Panels A and D are at z = 20.4 m HAB; B and E are at z = 11.6 m; C and F are at z = 6.7 m.**

Figure 13

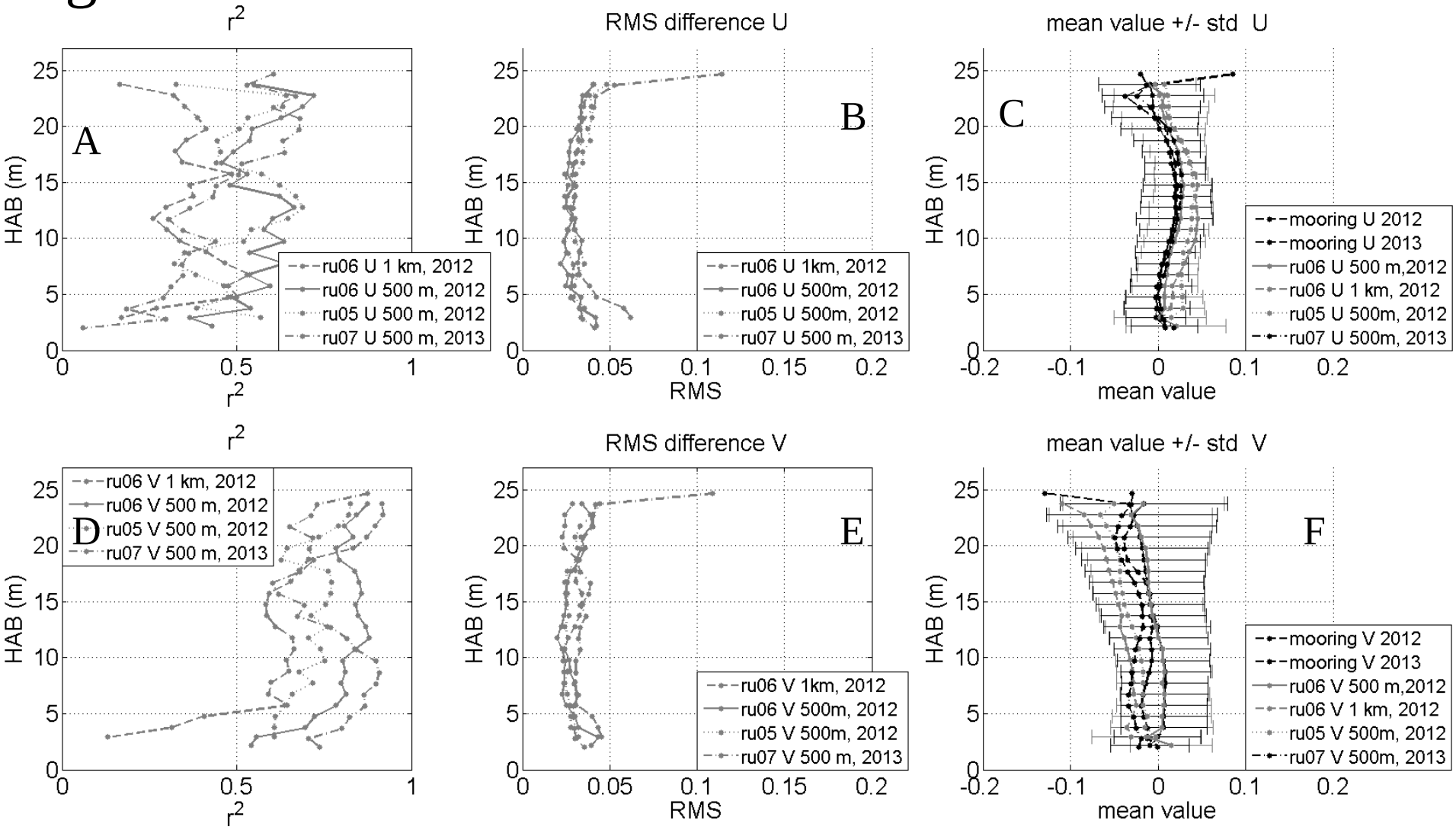
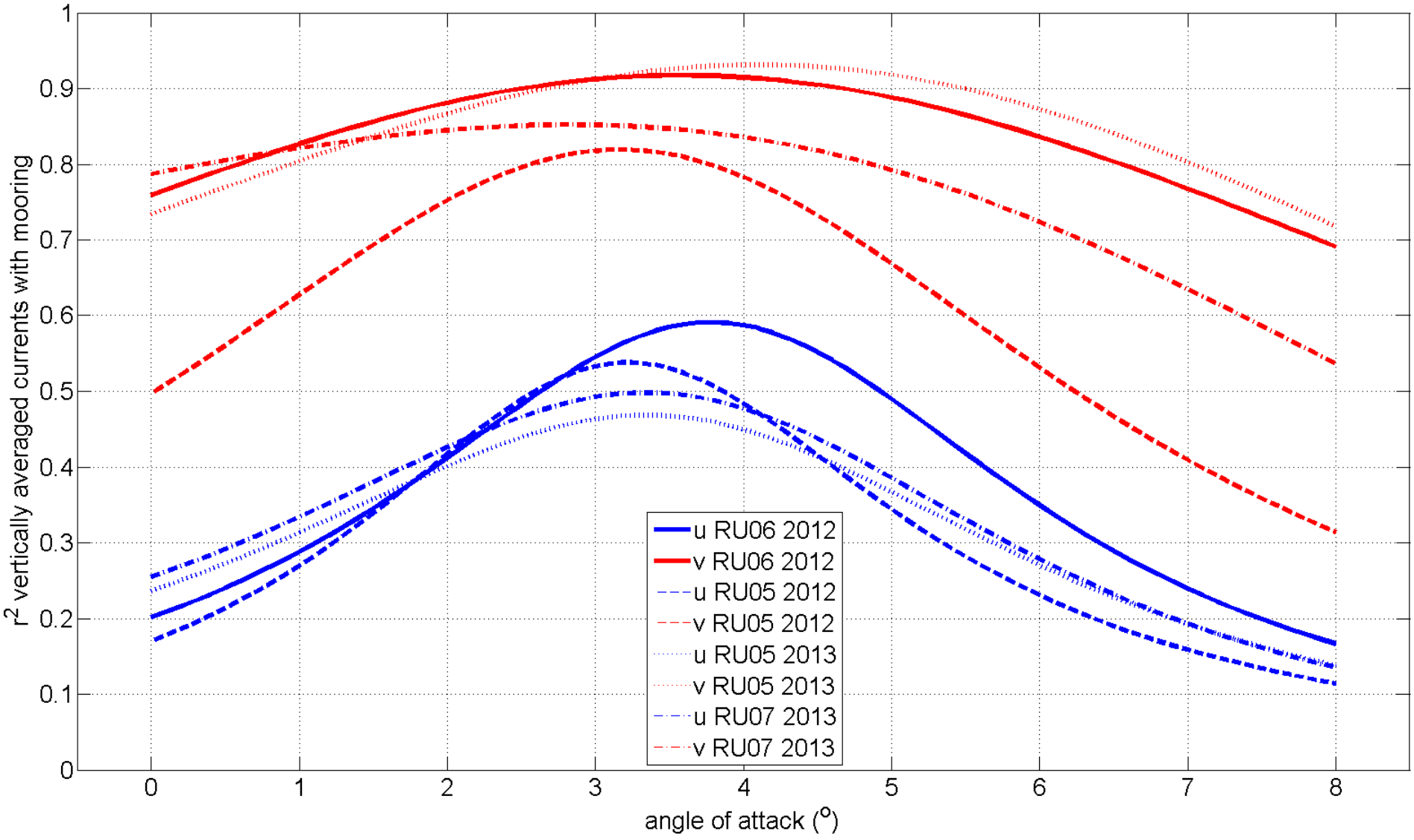


Figure 13: Vertical profiles of r^2 (A), RMS difference (B) and mean value +/- one standard deviation displayed as horizontal error bars (C) of u(z,t). Vertical profiles of r^2 (D), RMS difference (E) and mean value (F) +/- one standard deviation of v(z,t) are shown in the bottom row. Standard deviations are very similar between deployments so, for clarity, only one set of error bars for the glider and mooring are shown in C and F.

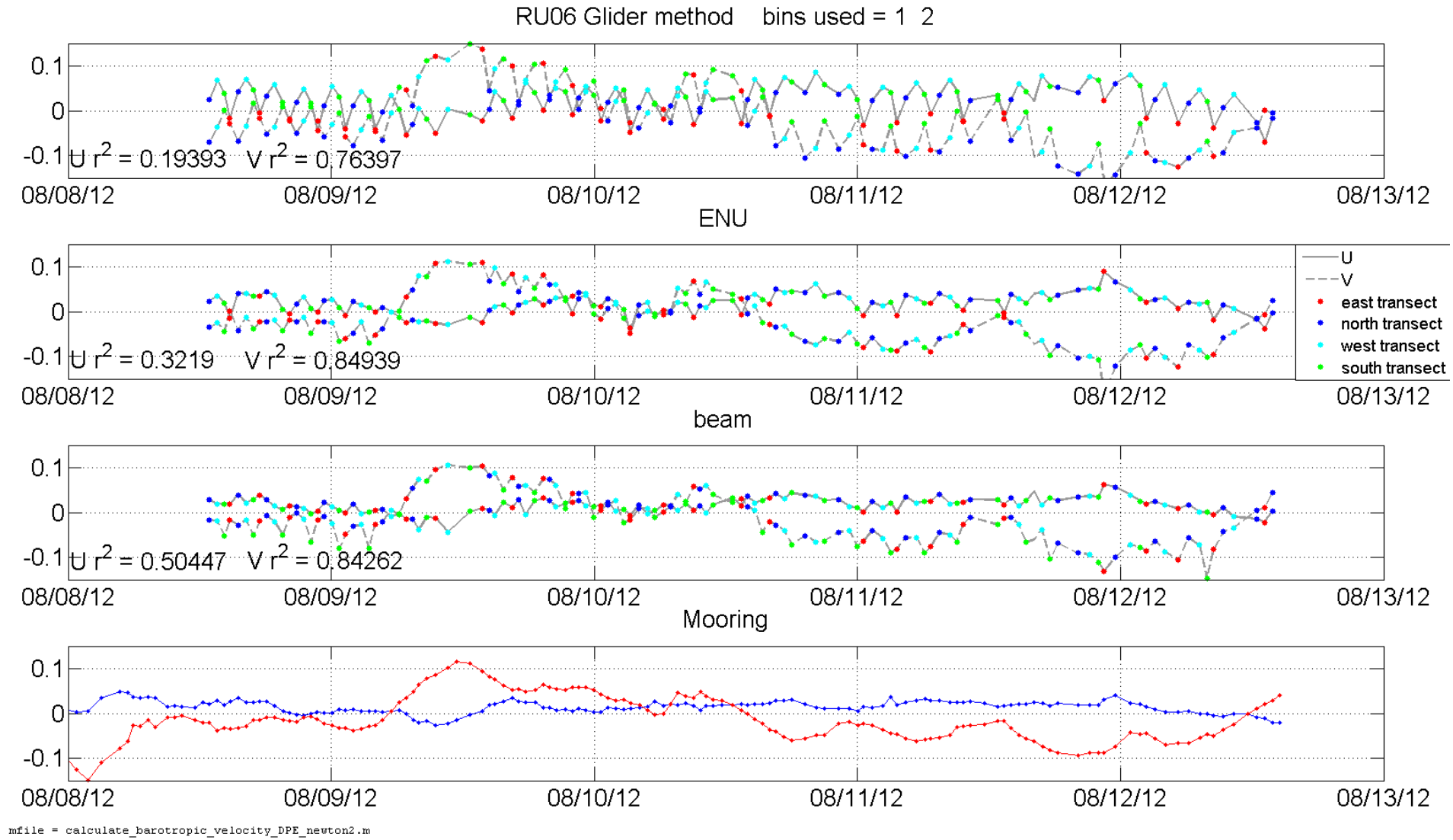
Table 1

Glider, Box Size, Year	HAB = 20.4 m			HAB = 11.6 m			HAB = 6.7 m		
	μ_{m-g}	RMS	r^2	μ_{m-g}	RMS	r^2	μ_{m-g}	RMS	r^2
ru06, 1km, 2012	0.12	0.29	0.40	0.15	0.30	0.46	0.087	0.21	0.34
ru06, 500 m, 2012	0.057	0.22	0.69	0.083	0.16	0.62	0.05	0.09	0.47
ru05, 500 m, 2012	0.046	0.22	0.61	0.06	0.13	0.68	0.034	0.08	0.48
ru07, 500 m, 2013	-0.013	0.29	0.68	0.002	0.21	0.65	-0.027	0.13	0.42
Ru05, 500 m, 2013	-0.04	0.28	0.69	0.01	0.20	0.62	-0.30	0.12	0.48

Table 1: Mean differences of temperature measured by the glider's CTD subtracted from moored thermistors (μ_{m-g}), RMS differences, and r^2 for the three HABs in figure 3. Deployment and sampling information is noted in the far left column.



Same as figure 5 but with lines instead of discrete points



SIMILAR to figure 4. angle of attack = 0 in top panel. Unlike figure 4 I don't have a panel here that shows the time series with angle of attack = 3.7. let me know if you want to see that

Figure 3

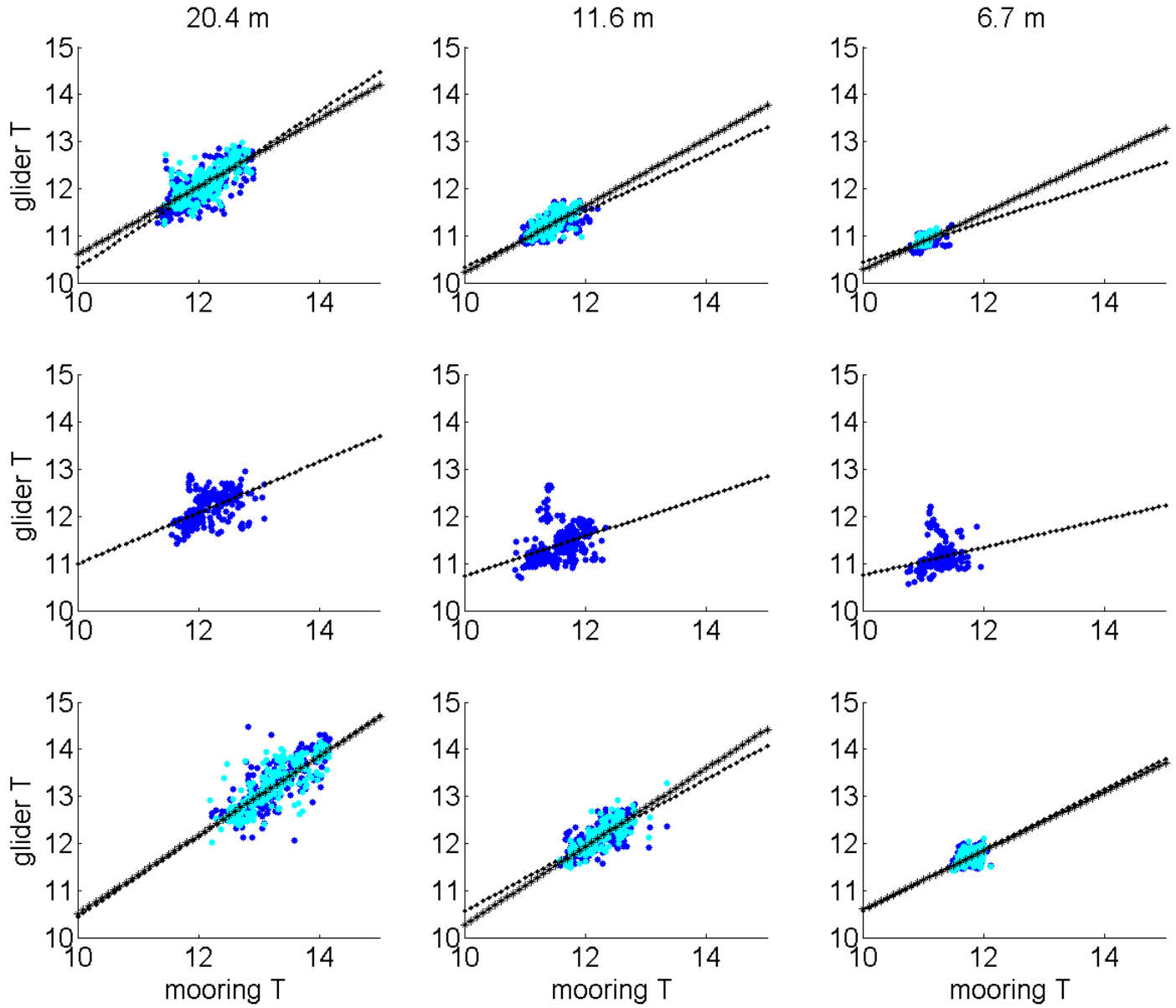
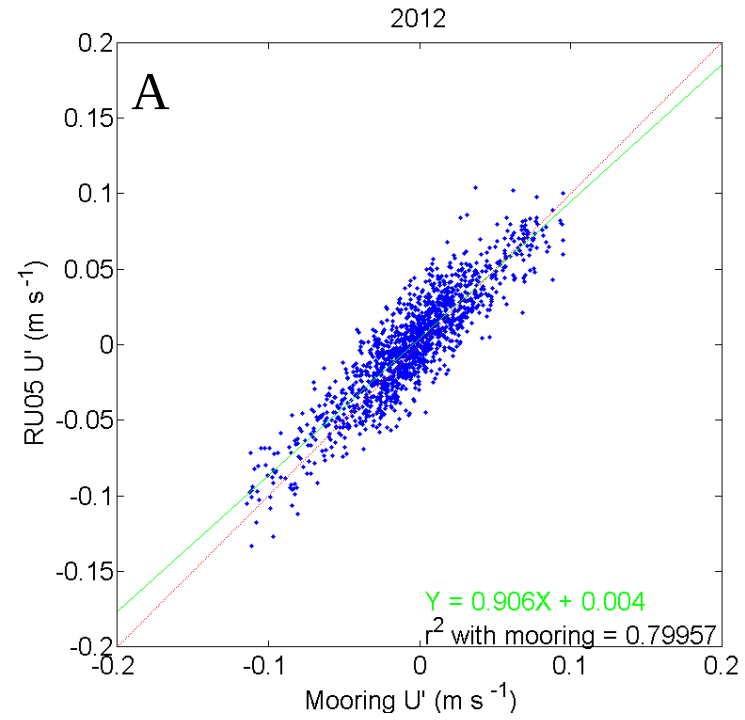
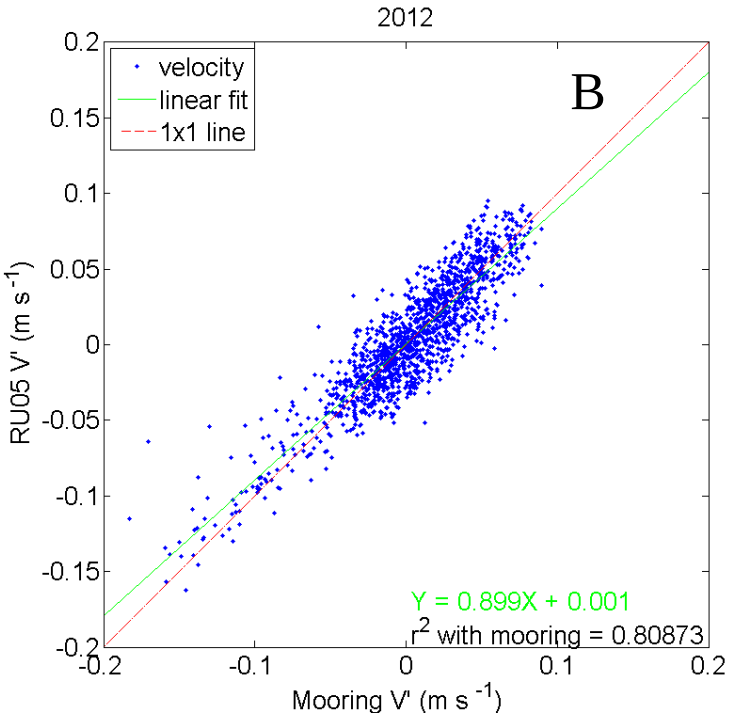
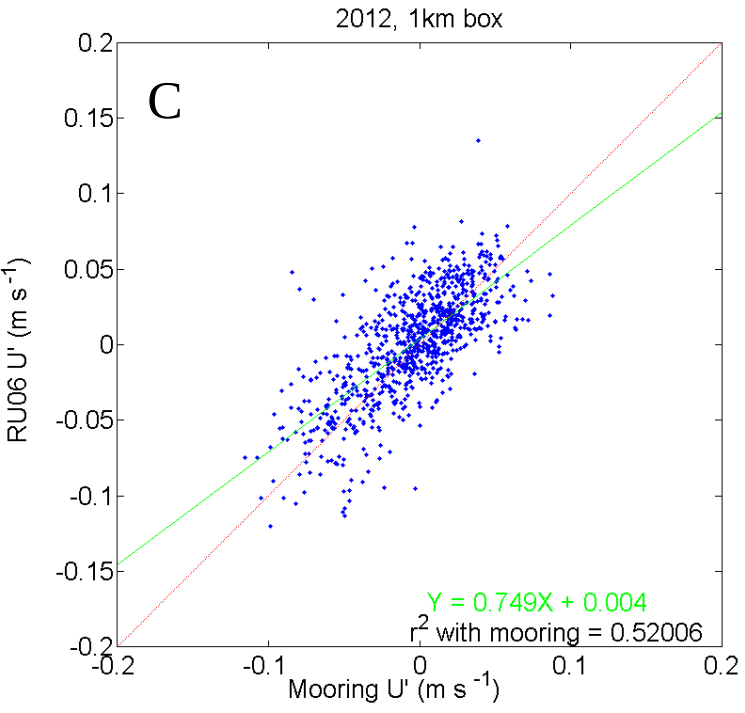


Figure 6: Glider temperatures from the "search" method compared with mooring temperatures. The top row refers to the period when the gliders flew a 500 m box, middle row refers to the 1 km pattern, and the bottom row is for 2013. HAB for each column are given, blue is RU06 and cyan is RU05 in 2012. In 2013, RU05 is blue and RU07 is cyan. Black lines are linear fits to the data. Moored instrument at each height is listed in section 2.1.







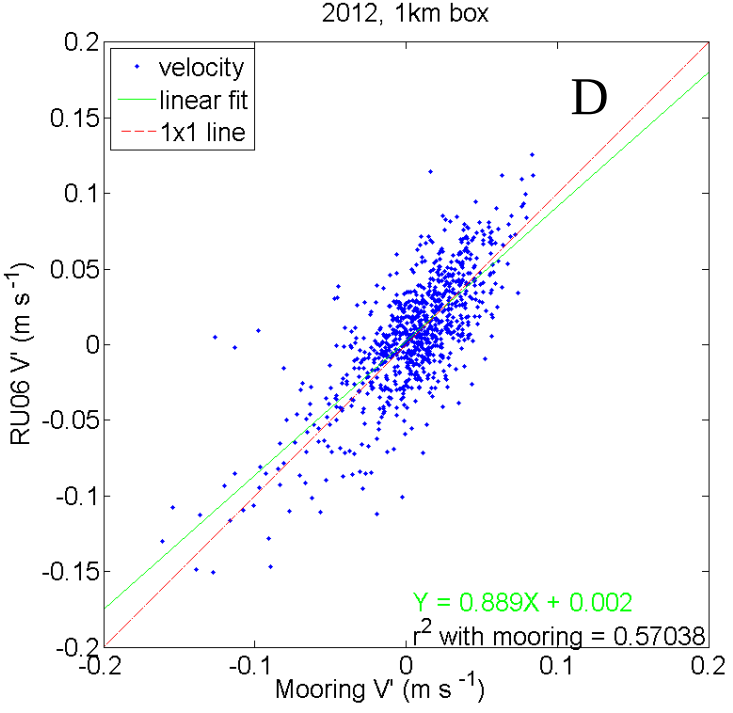


Figure 10

Figure 10: Linear regression of u' (A) and v' (B) while RU05 sampled the 500m box in 2012. Linear regressions of u' (C) and v' (D) when RU06 sampled the 1 km box. Green and red line indicate best fit and a slope of 1, respective as in figure 9

Figure 11

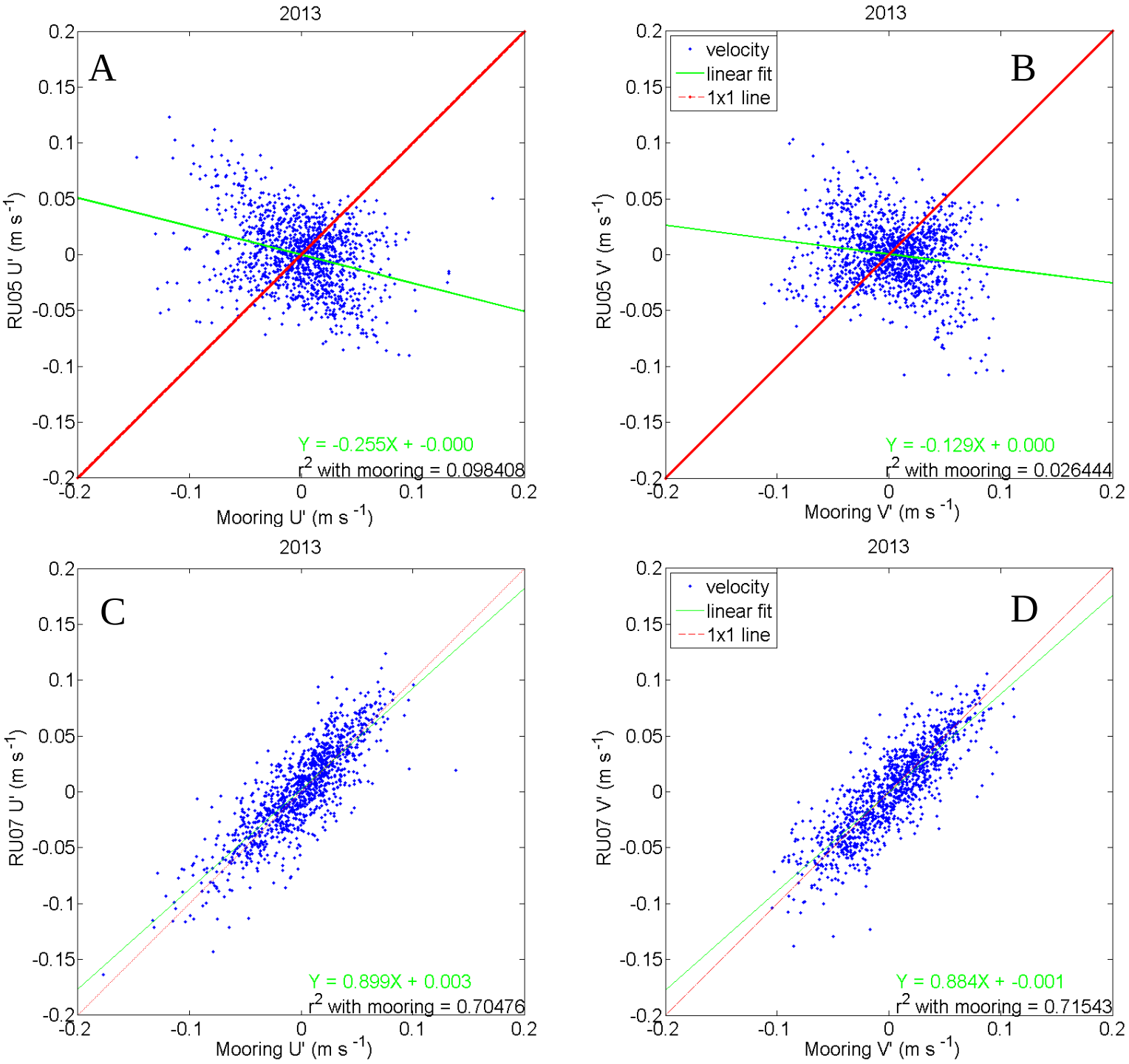


Figure 11: Linear regression of u' (A) and v' (B) while RU05 sampled the 500m box in 2013. Linear regressions of u' (C) and v' (D) when RU07 sampled the 500 m box in 2013. Green and red lines are the same as figure 9, 10.

Table 1 (old version computed with mooring instruments changing HAB)

Glider, Box Size, Year	HAB = 20.4 m			HAB = 11.6 m			HAB = 6.7 m		
	μ_{m-g}	RMS	r^2	μ_{m-g}	RMS	r^2	μ_{m-g}	RMS	r^2
ru06, 1km, 2012	0.12	0.26	0.47	0.15	0.36	0.42	0.087	0.27	0.27
ru06, 500 m, 2012	0.057	0.21	0.70	0.083	0.24	0.56	0.05	0.16	0.29
ru05, 500 m, 2012	0.046	0.21	0.61	0.06	0.21	0.55	0.034	0.14	0.38
ru07, 500 m, 2013	-0.013	0.28	0.69	0.002	0.20	0.66	-0.027	0.11	0.42
Ru05, 500 m, 2013	-0.04	0.29	0.67	0.01	0.22	0.57	-0.30	0.11	0.43

Table 1: Mean differences of temperature measured by the glider's CTD subtracted from moored thermistors (μ_{m-g}), RMS differences, and r^2 for the three HABs in figure 3. Deployment and sampling information is noted in the far left column.