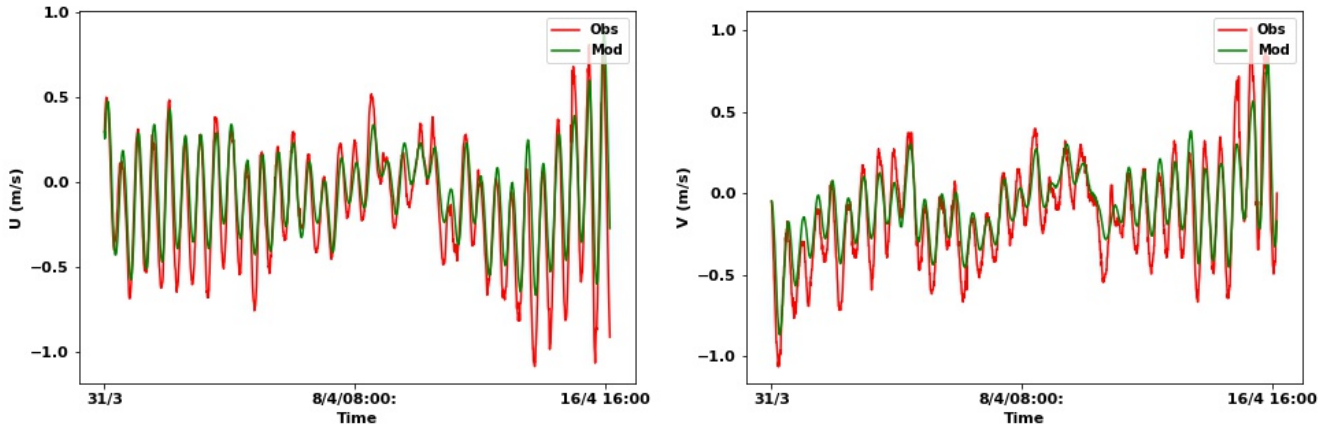
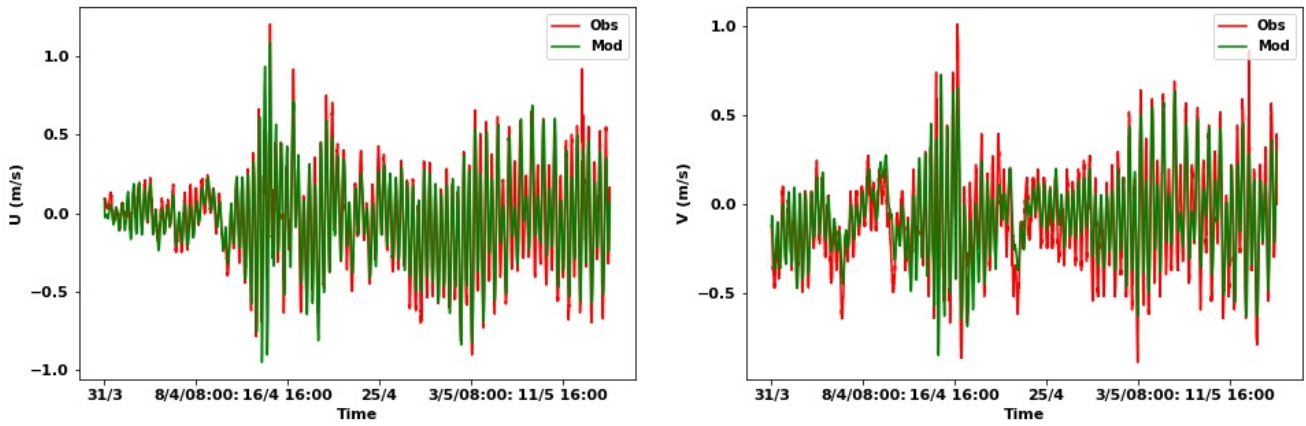


## Online Resource 1

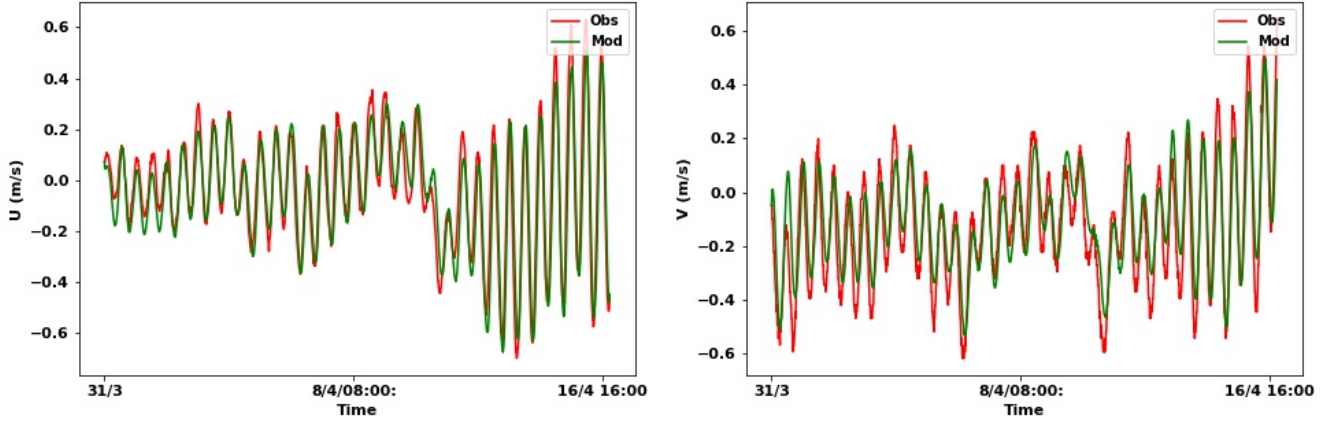
This document contains all the velocity plots of the point model runs for all the beacons along with the corresponding observations.



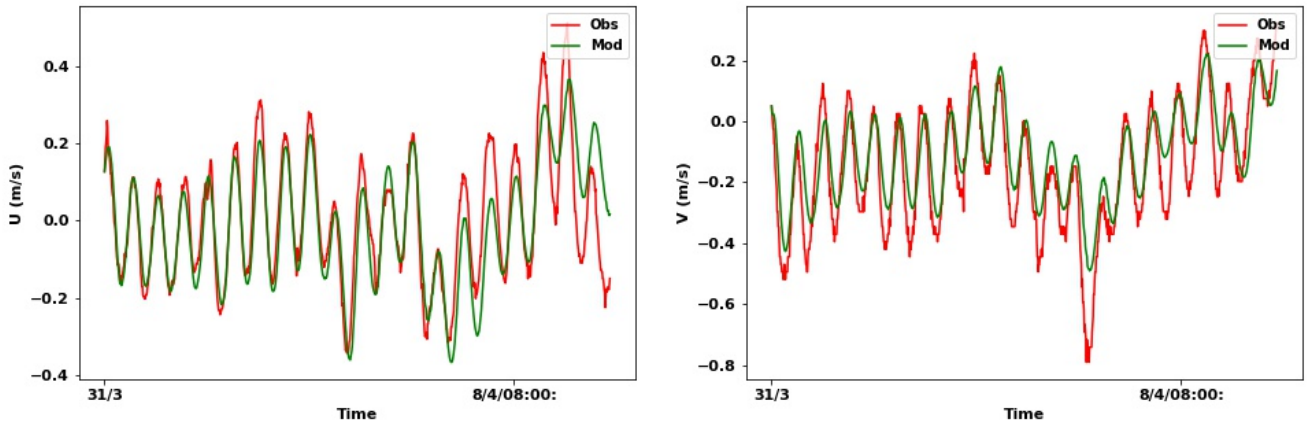
Time series plot for the longitudinal ( $u$ ) and latitudinal ( $v$ ) velocities for beacon 02. Observations are in red and point model simulations are in green. Time on the  $x$ -axis is given in format DD/M HH:MM with year being 2014. The velocities are plotted at the same time of the observations of the beacon positions, and thus, are separated by a time step of 15 min.



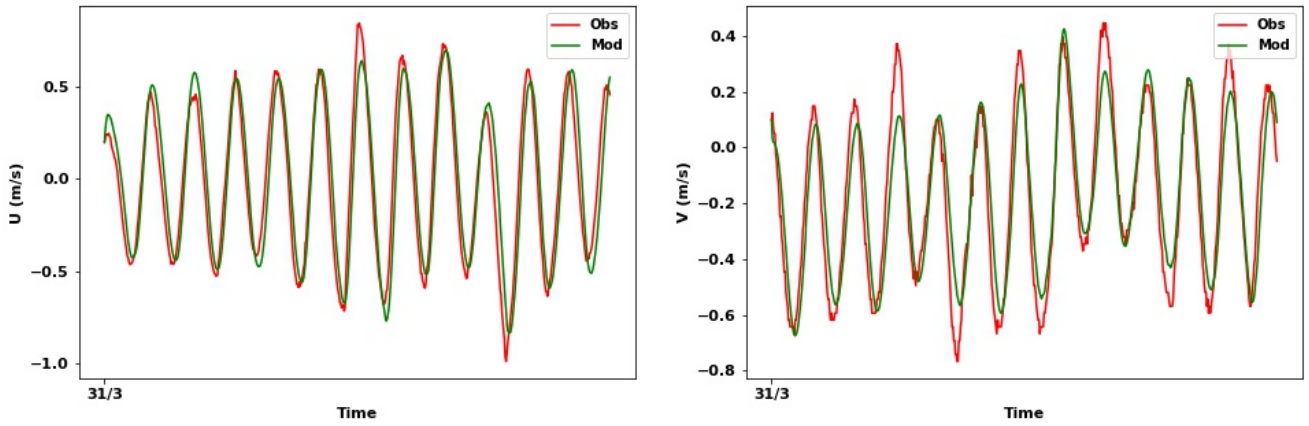
Time series plot for the longitudinal ( $u$ ) and latitudinal ( $v$ ) velocities for beacon 03. Observations are in red and point model simulations are in green. Time on the  $x$ -axis is given in format DD/M HH:MM with year being 2014. The velocities are plotted at the same time of the observations of the beacon positions, and thus, are separated by a time step of 15 min.



Time series plot for the longitudinal ( $u$ ) and latitudinal ( $v$ ) velocities for beacon 09. Observations are in red and point model simulations are in green. Time on the  $x$ -axis is given in format DD/M HH:MM with year being 2014. The velocities are plotted at the same time of the observations of the beacon positions, and thus, are separated by a time step of 15 min.



Time series plot for the longitudinal ( $u$ ) and latitudinal ( $v$ ) velocities for beacon 13. Observations are in red and point model simulations are in green. Time on the  $x$ -axis is given in format DD/M HH:MM with year being 2014. The velocities are plotted at the same time of the observations of the beacon positions, and thus, are separated by a time step of 15 min.



Time series plot for the longitudinal ( $u$ ) and latitudinal ( $v$ ) velocities for beacon 14. Observations are in red and point model simulations are in green. Time on the  $x$ -axis is given in format DD/M HH:MM with year being 2014. The velocities are plotted at the same time of the observations of the beacon positions, and thus, are separated by a time step of 15 min.