Figure B.22: Average precipitation diurnal cycle over the month of October.

Figure B.23: Average precipitation diurnal cycle over the month of November.
Figure B.24: Average precipitation diurnal cycle over the month of December.
Appendix C

WRF-Hydro calibration experiment

C.1 Latent and sensible heat partitioning

Figure C.1: Daily latent and sensible heat partitioning between WRF-Hydro best calibration run (black) and observations (blue) at the ITCA1 station site, with the associated statistics in terms of RMSE, $R^2$ and regression coefficient.
Figure C.2: Daily latent and sensible heat partitioning between WRF-Hydro best calibration run (black) and observations (blue) at the ITCA2 station site, with the associated statistics in terms of RMSE, $R^2$ and regression coefficient.

Figure C.3: Daily latent and sensible heat partitioning between WRF-Hydro best calibration run (black) and observations (blue) at the ITCA3 station site, with the associated statistics in terms of RMSE, $R^2$ and regression coefficient.
Figure C.4: Daily latent and sensible heat partitioning between WRF-Hydro best calibration run (black) and observations (blue) at the ITRO4 station site, with the associated statistics in terms of RMSE, $R^2$ and regression coefficient.

Figure C.5: Daily latent and sensible heat partitioning between WRF-Hydro best calibration run (black) and observations (blue) at the ITCOL station site, with the associated statistics in terms of RMSE, $R^2$ and regression coefficient.
C.2 Net radiation

![Net radiation scatterplot between WRF-Hydro best calibration run and observations at the ITCA1 station site, with the associated statistics in terms of RMSE, R² and regression coefficient.](image)

Figure C.6: Net radiation scatterplot between WRF-Hydro best calibration run and observations at the ITCA1 station site, with the associated statistics in terms of RMSE, R² and regression coefficient.
Figure C.7: Net radiation scatterplot between WRF-Hydro best calibration run and observations at the ITCA2 station site, with the associated statistics in terms of RMSE, $R^2$ and regression coefficient.

Figure C.8: Net radiation scatterplot between WRF-Hydro best calibration run and observations at the ITCA3 station site, with the associated statistics in terms of RMSE, $R^2$ and regression coefficient.
Figure C.9: Net radiation scatterplot between WRF-Hydro best calibration run and observations at the ITRO4 station site, with the associated statistics in terms of RMSE, \( R^2 \) and regression coefficient.

Figure C.10: Net radiation scatterplot between WRF-Hydro best calibration run and observations at the ITCOL station site, with the associated statistics in terms of RMSE, \( R^2 \) and regression coefficient.
C.3 Soil moisture comparisons

Figure C.11: Soil moisture dynamic for level SM1=0.1 m (panel (a)) and SM2=0.3 m (panel (b)) soil depths and rain and temperature variations (panel (c)) for the year 2012 at Torre dell’ Olmo station site.

Figure C.12: Soil moisture dynamic for level SM1=0.1 m (panel (a)) and SM2=0.3 m (panel (b)) soil depths and rain and temperature variations (panel (c)) for the year 2012 at Solomeo station site.
Figure C.13: Soil moisture dynamic for level SM1=0.1 m (panel (a)) and SM2=0.3 m (panel (b)) soil depths and rain and temperature variations (panel (c)) for the year 2012 at San Benedetto station site.

Figure C.14: Soil moisture dynamic for level SM1=0.1 m (panel (a)) and SM2=0.3 m (panel (b)) soil depths and rain and temperature variations (panel (c)) for the year 2012 at Pieve Santo Stefano station site.
Figure C.15: Soil moisture dynamic for level SM1=0.1 m (panel (a)) and SM2=0.3 m (panel (b)) soil depths and rain and temperature variations (panel (c)) for the year 2012 at Petrelle station site.

Figure C.16: Soil moisture dynamic for level SM1=0.1 m (panel (a)) and SM2=0.3 m (panel (b)) soil depths and rain and temperature variations (panel (c)) for the year 2012 at Monterchi station site.