

Figure 1. Maps and time-series of changes to clear-sky radiation fields (ignoring the effects of clouds) due to BBA over 18 September 2012. (a-c) show maps over 5-km domain of the difference between the FE and nFE scenarios, averaged over 24 hours, from dawn to dawn, between 10:00 UTC 18 and 10:00 UTC 19 September. (d-f) show model output averaged over the 5-km domain at each hour of simulation for the FE, nFE, nARI and Ctrl scenarios; with (d) and (e) plotting difference from Ctrl scenario. (a) and (d) change in downwelling SW radiation at the surface. (b) and (e) change in radiative balance at TOA. (c) and (f) SW radiation absorbed by the atmospheric column. Calculations of derived variables are explained in Appendix A. All variables are in units W m^{-2} .

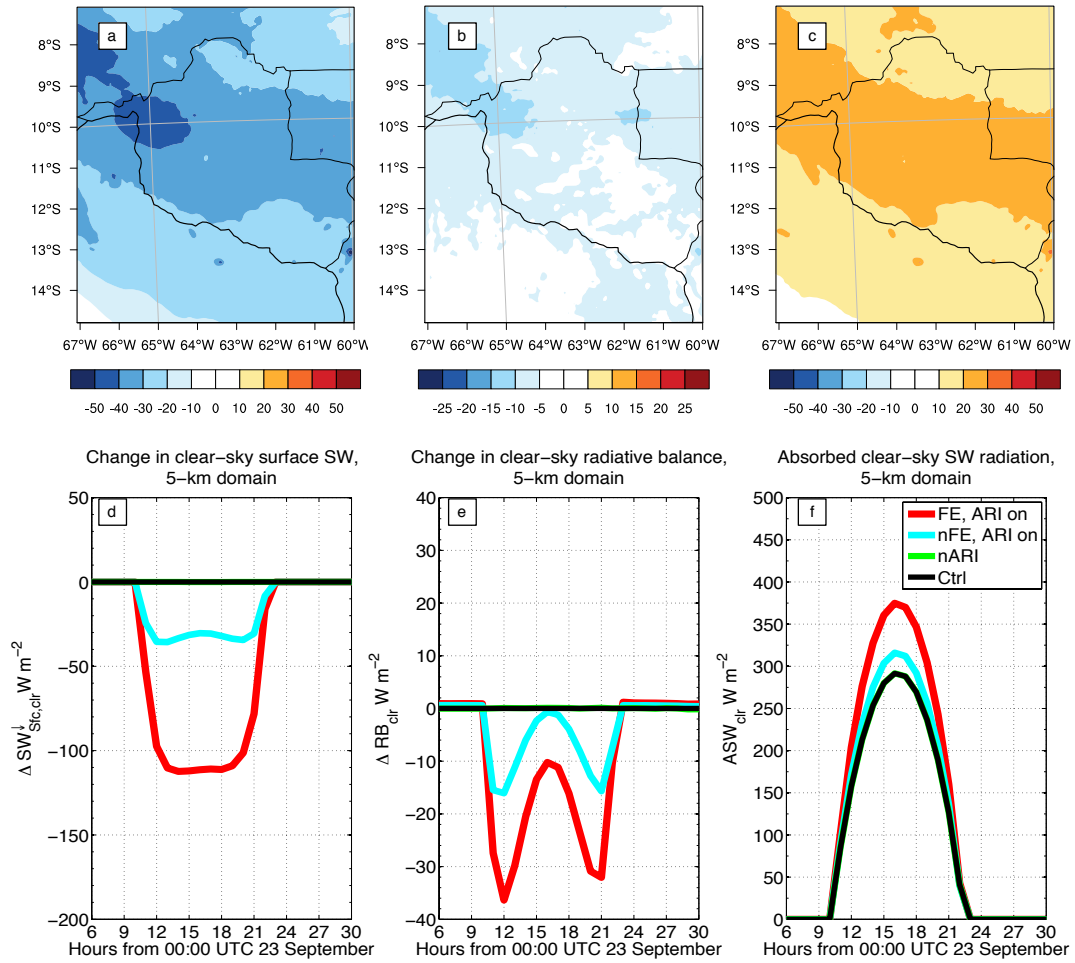


Figure 2. Maps and time-series of changes to clear-sky radiation fields (ignoring the effects of clouds) due to BBA over 23 September 2012. (a-c) show maps over 5-km domain of the difference between the FE and nFE scenarios, averaged over 24 hours, from dawn to dawn, between 10:00 UTC 23 and 10:00 UTC 24 September. (d-f) show model output averaged over the 5-km domain at each hour of simulation for the FE, nFE, nARI and Ctrl scenarios; with (d) and (e) plotting difference from Ctrl scenario. (a) and (d) change in downwelling SW radiation at the surface. (b) and (e) change in radiative balance at TOA. (c) and (f) SW radiation absorbed by the atmospheric column. Calculations of derived variables are explained in Appendix A. All variables are in units $W m^{-2}$.

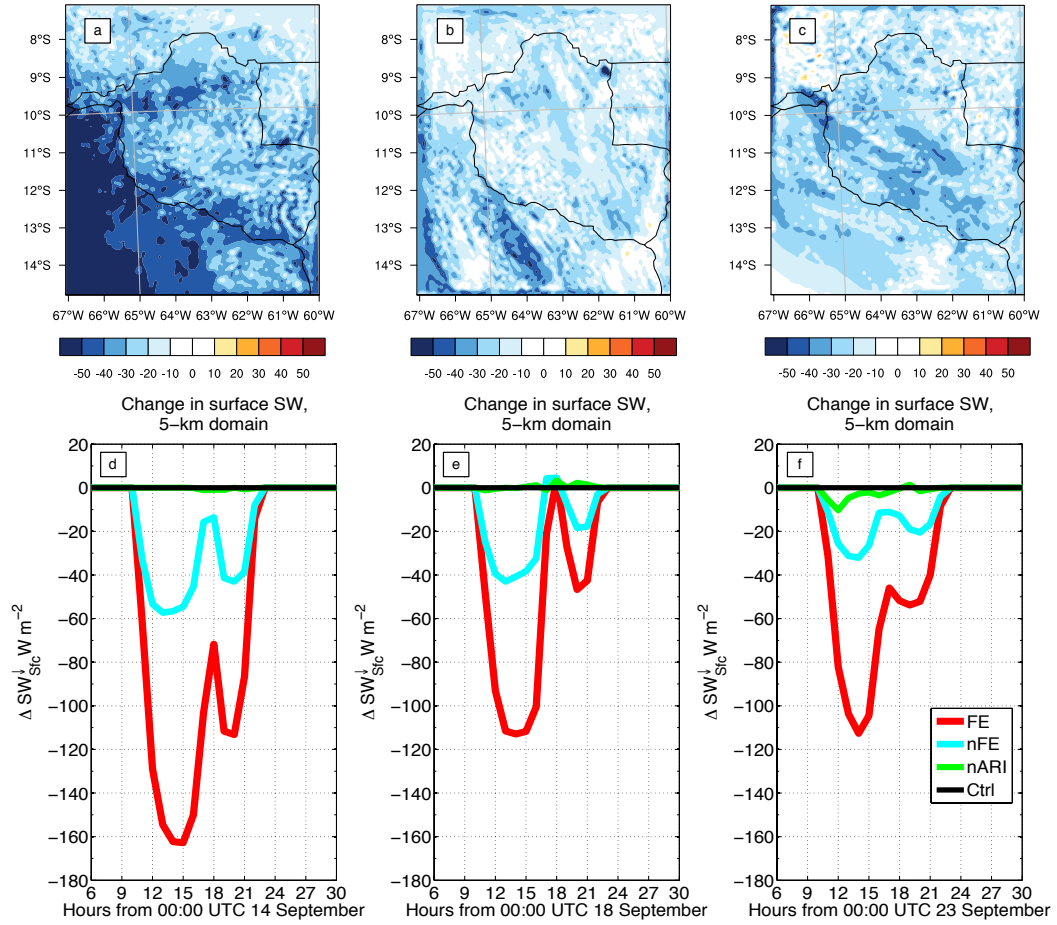


Figure 3. Maps and time-series of changes to downwelling SW radiation at surface for each of the three case study days, including the effects of clouds. (a-c) show maps over 5-km domain of the difference between the FE and nFE scenarios, averaged over 24 hours, from dawn to dawn, from 10:00 UTC, for (a) 14 September, (b) 18 September and (c) 23 September. (d-f) time series of downwelling SW radiation at surface averaged over 5-km domain at each hour of simulation. All variables are in units W m⁻².