

Figure 1. Panels (a–d): Intensity–Duration (ID) curves for renewable energy drought events of severity rank 1 ($S=1$) in Spain (ES). Solar-only (yellow), wind-only (blue), and mixed capacity factor (CF) combinations are shown, with the optimal mix in green and the 50–50 mix in black (other combinations are displayed by dashed lines). Each panel shows the optima for different duration ranges: (a) D1–90, (b) D1–10, (c) D10–30 and (d) D30–90. Panel (e) displays the corresponding relative differences in drought intensity (%) between different renewable deployment configurations and the reference 50–50 solar–wind mix. Yellow and blue curves show differences between the solar-only and wind-only cases, respectively, and the 50–50 mix. Green curves show differences between the optimal mixes obtained for the four different optimized duration intervals (D1–90, D1–10, D10–30, and D30–90) and the 50–50 mix. Positive values indicate cases in which the 50–50 mix yields higher drought intensity (performs worse) than the corresponding reference configuration, while negative values indicate the opposite.

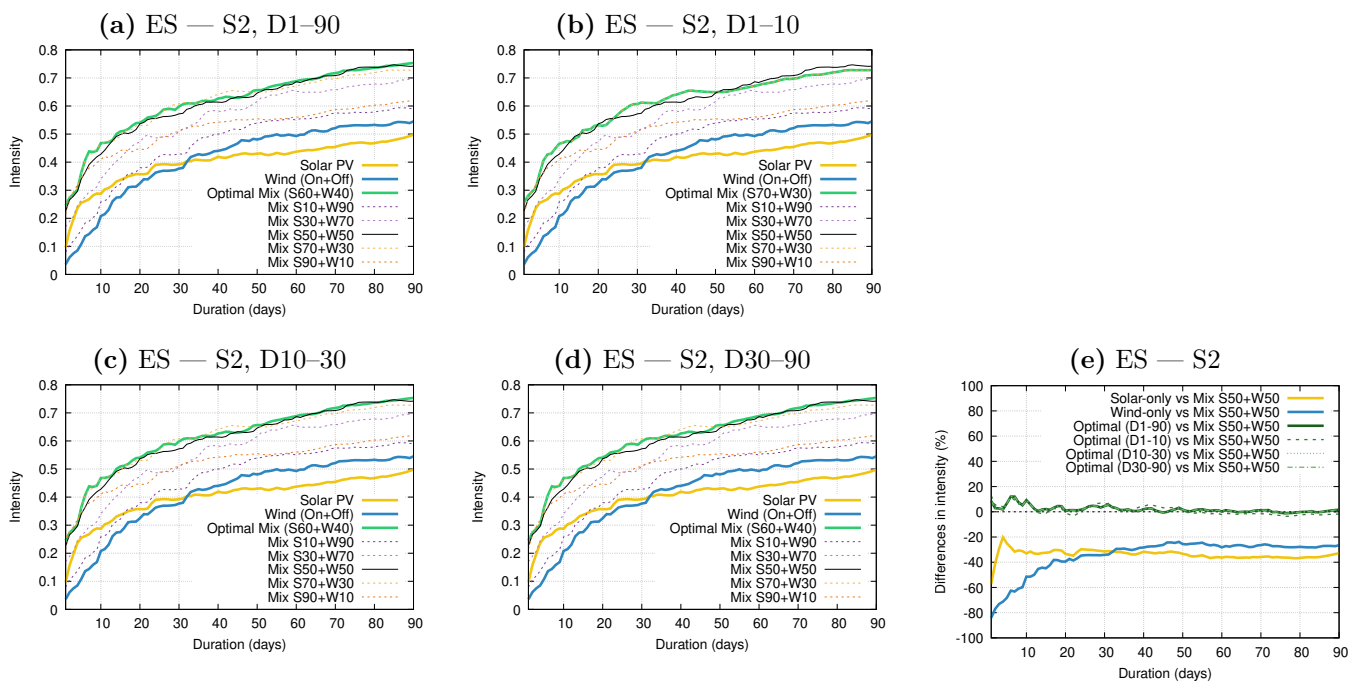


Figure 2. Same as Figure 1, but for events of severity rank 2 ($S=2$).

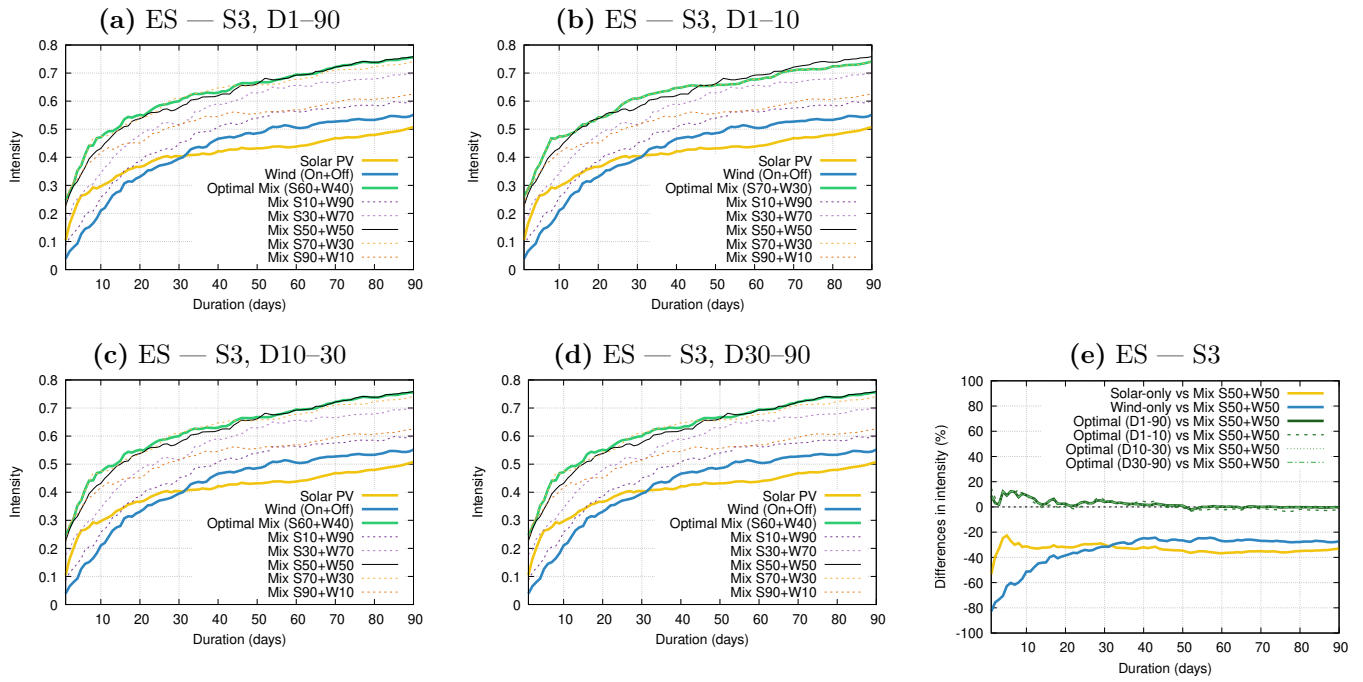


Figure 3. Same as Figure 1, but for events of severity rank 3 (S=3).

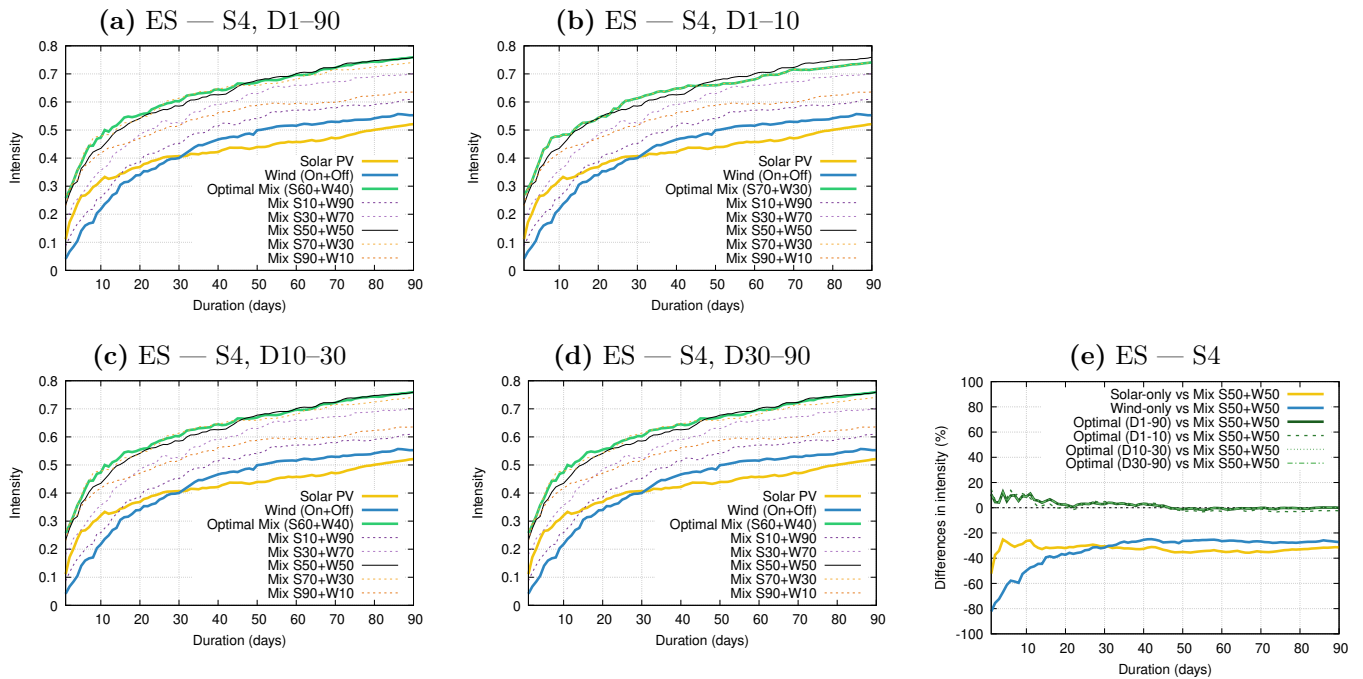


Figure 4. Same as Figure 1, but for events of severity rank 4 (S=4).

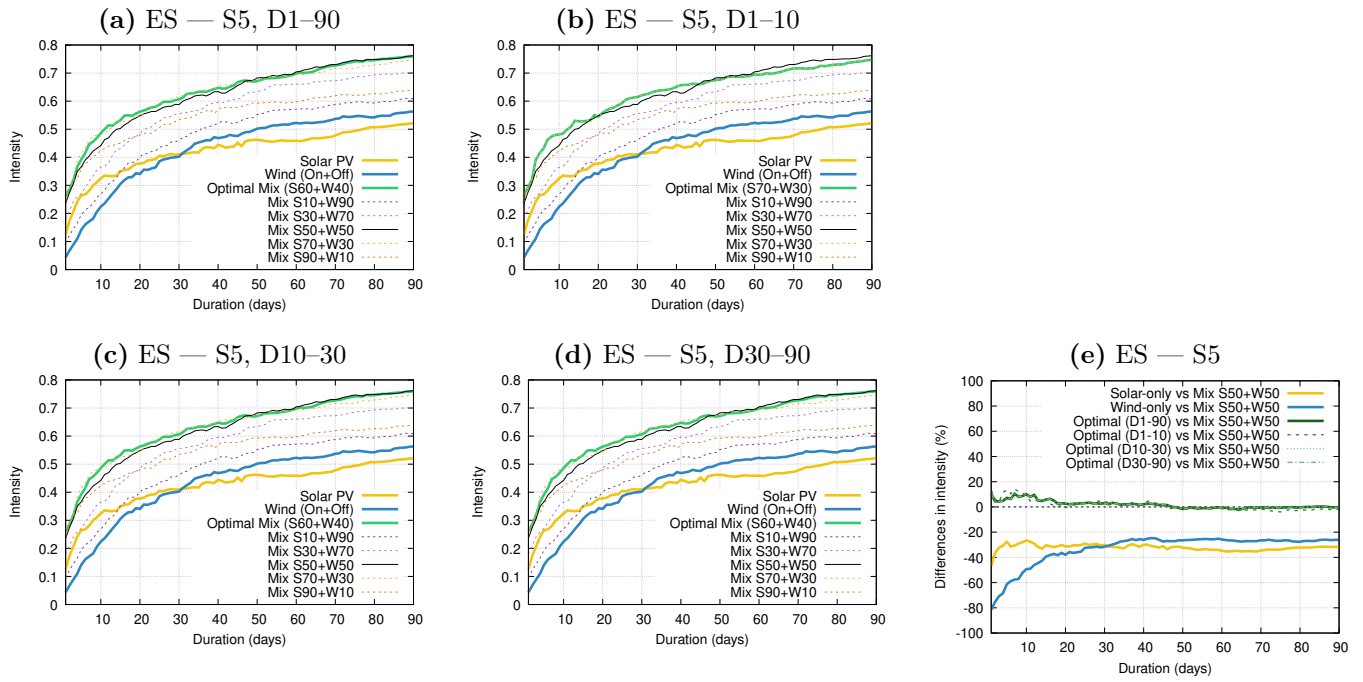


Figure 5. Same as Figure 1, but for events of severity rank 5 ($S=5$).

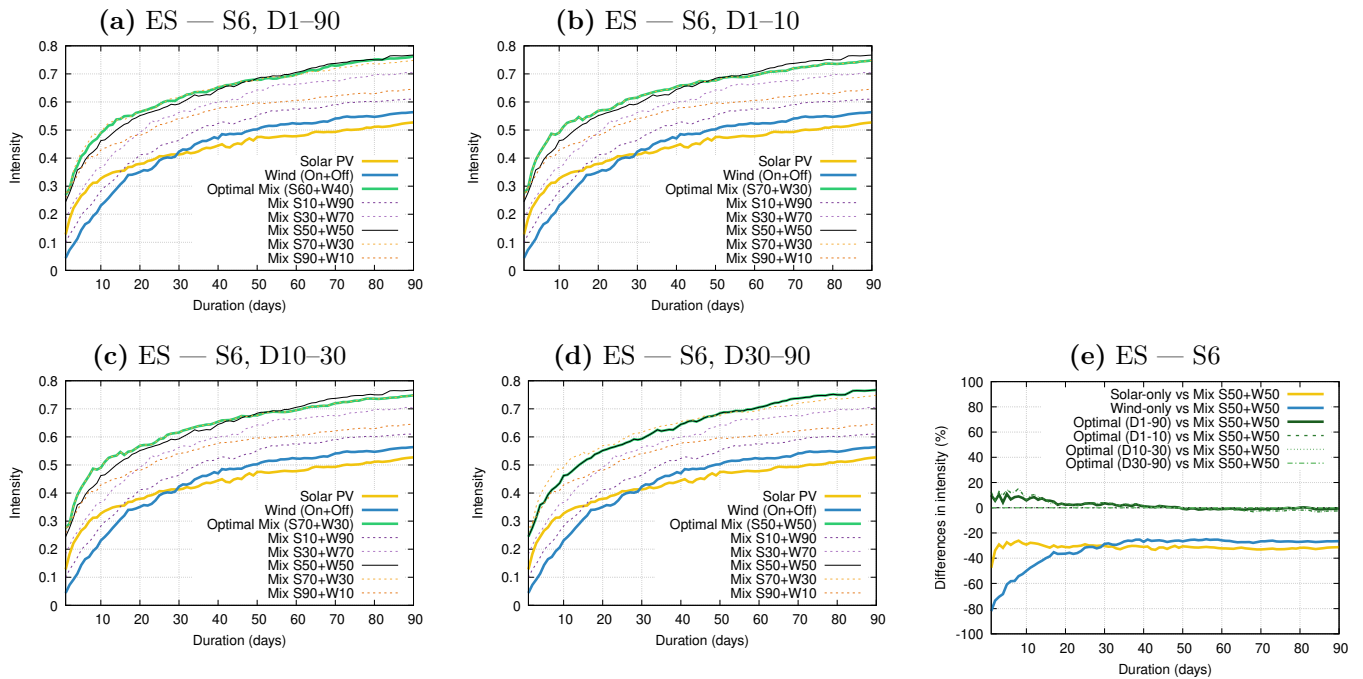


Figure 6. Same as Figure 1, but for events of severity rank 6 ($S=6$).

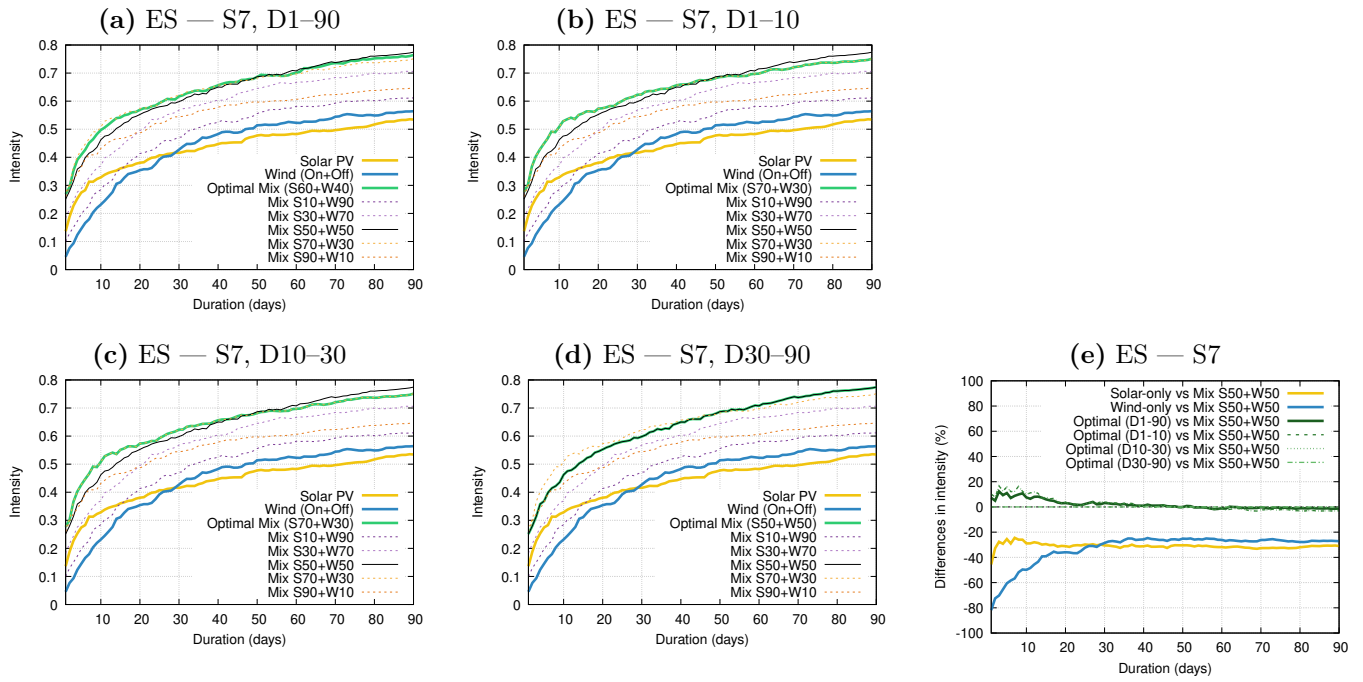


Figure 7. Same as Figure 1, but for events of severity rank 7 ($S=7$).

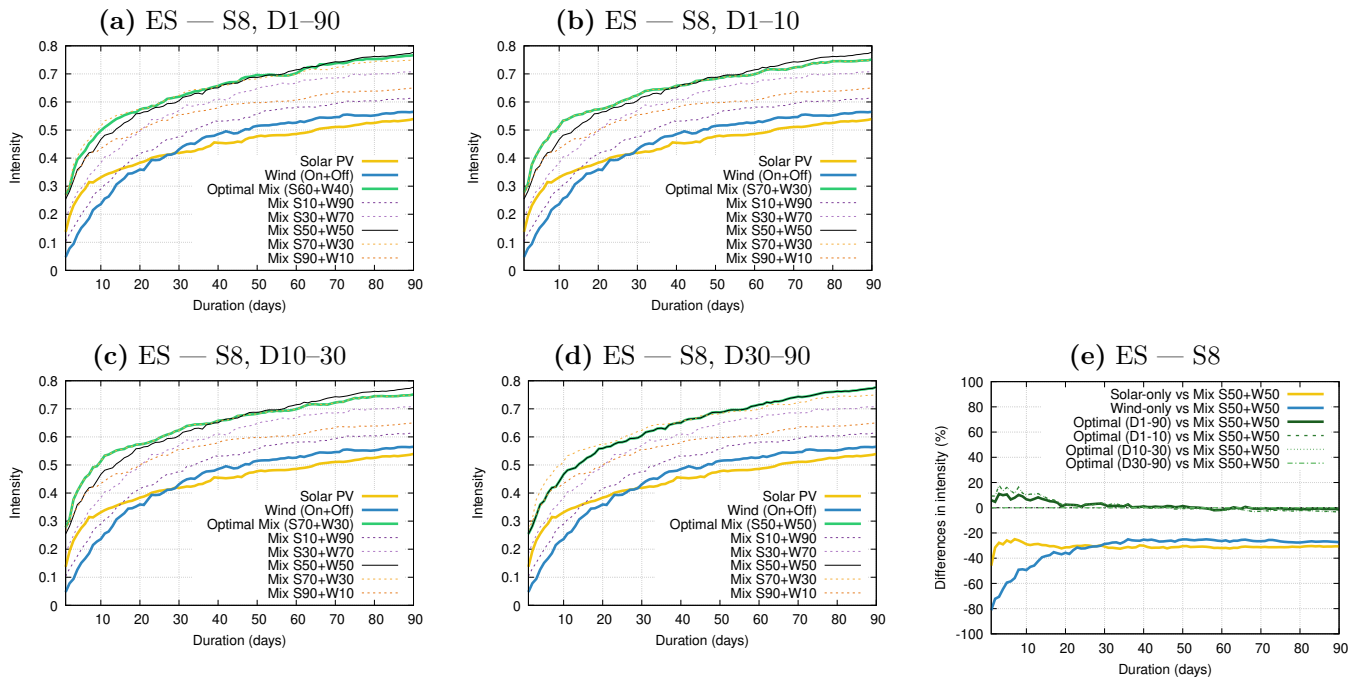


Figure 8. Same as Figure 1, but for events of severity rank 8 ($S=8$).

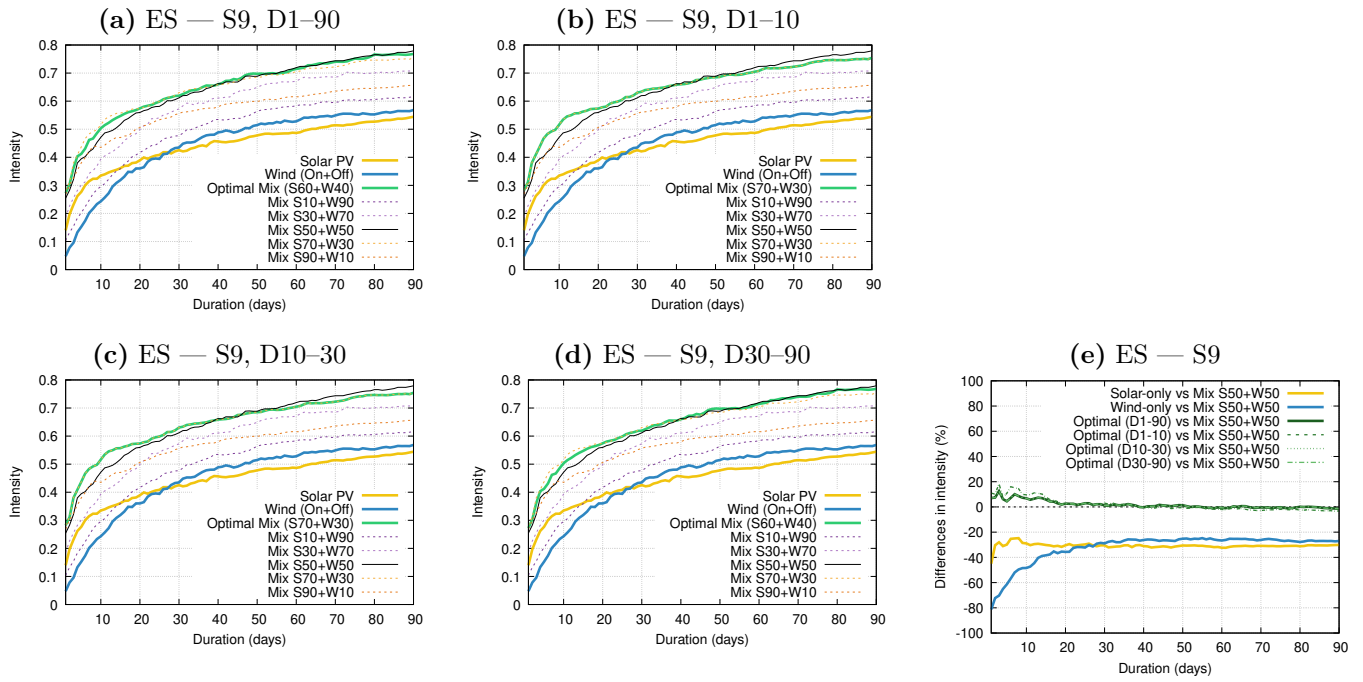


Figure 9. Same as Figure 1, but for events of severity rank 9 ($S=9$).

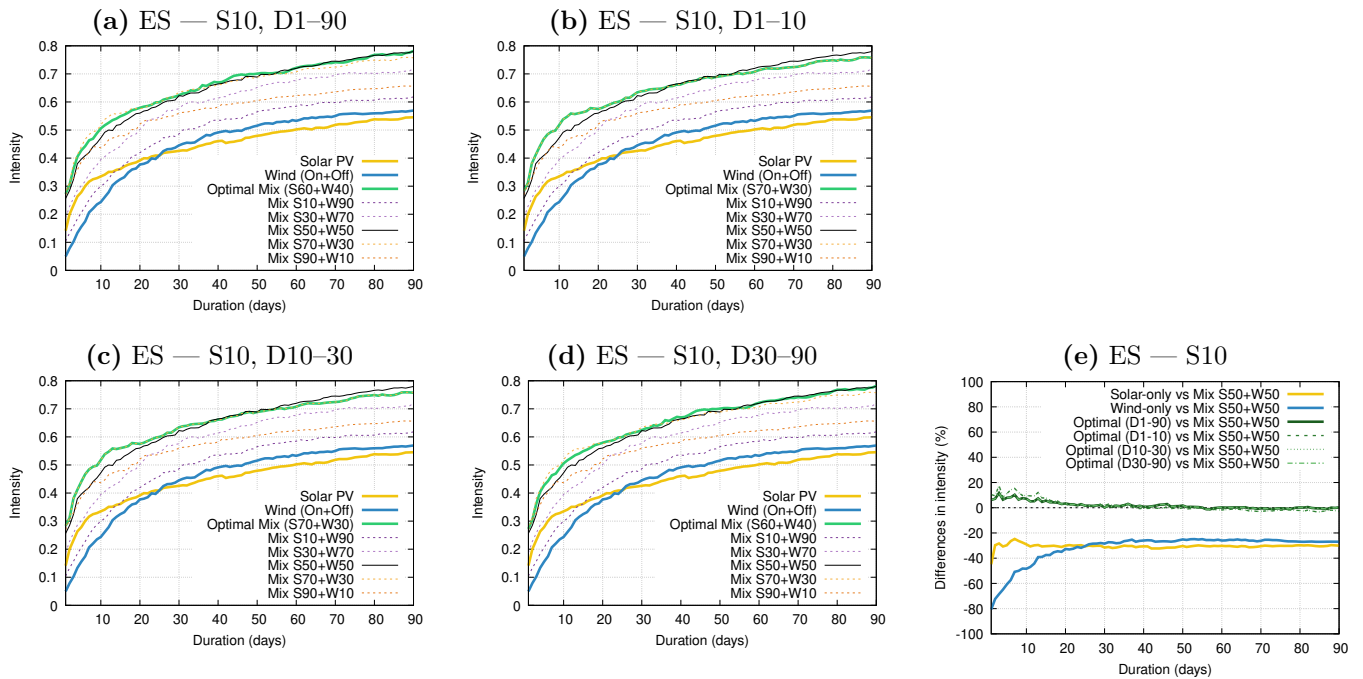


Figure 10. Same as Figure 1, but for events of severity rank 10 ($S=10$).