

The Role of Climate Covariability on Crop Yields in the Conterminous United States

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Supplementary Figures

Figure S1 Coefficient of Variation (CV) of (a) corn and (b) soybean yields for 1983-2012. CV is the ratio of the standard deviations of crop yields over the 30-year period to the average yield over the same period. Long-term mean county-level crop production of (c) corn and (d) soybean for 1983-2012. For each year, crop yield is first multiplied by harvest area as the crop production and then the long-term mean values are calculated. Figure was created by NCAR Command Language¹.

Figure S2 Inter-annual variability (standard deviation, STD) of county-level (a) precipitation, (b) temperature and (c) radiation for 1983-2012. Figure was created by NCAR Command Language¹

Figure S3 Sensitivity of rainfed and irrigated corn and soybean yields to one unit precipitation changes using simple regression technique (i.e. the effects of climate covariability is not excluded). Note: Very limited data exist for the separate estimates of rain-fed and irrigated crop yields over CONUS. And only those counties with data length larger than 10 years during 1983-2012 are used. Figure was created by NCAR Command Language¹

Figure S4 Same as Figure S3 but with the effects of climate covariability excluded. Figure was created by NCAR Command Language¹

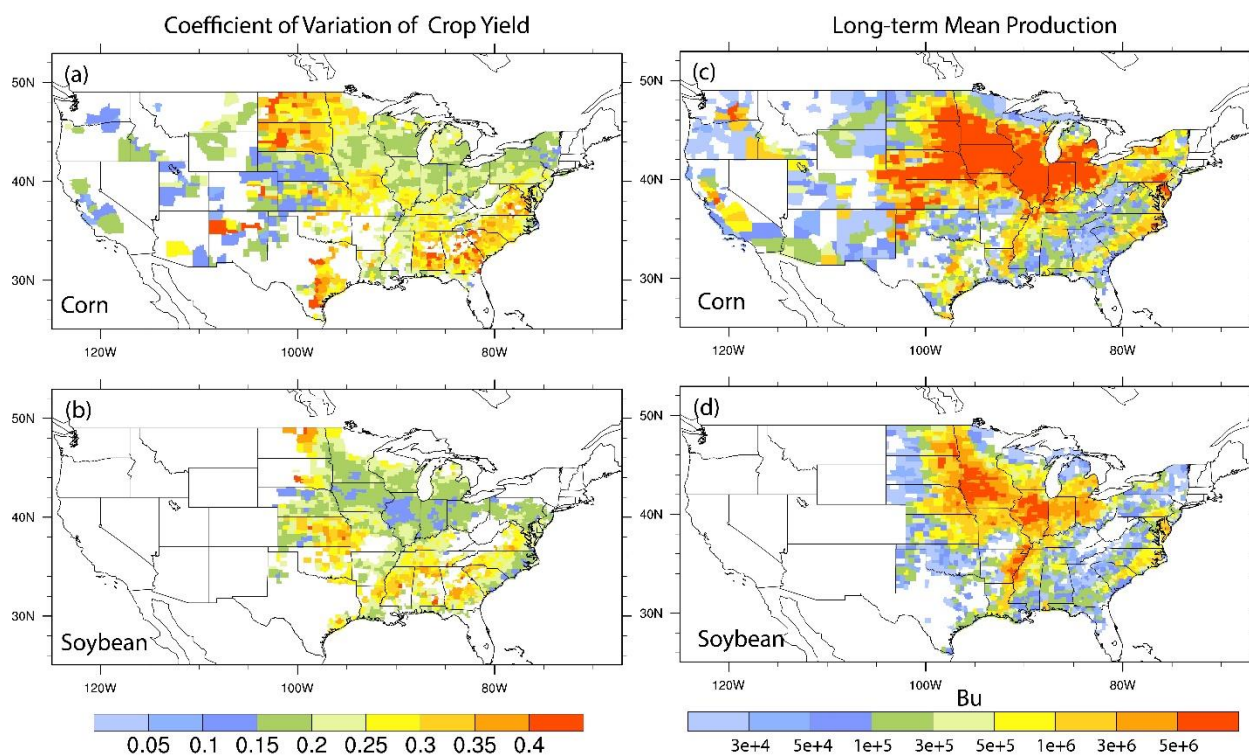


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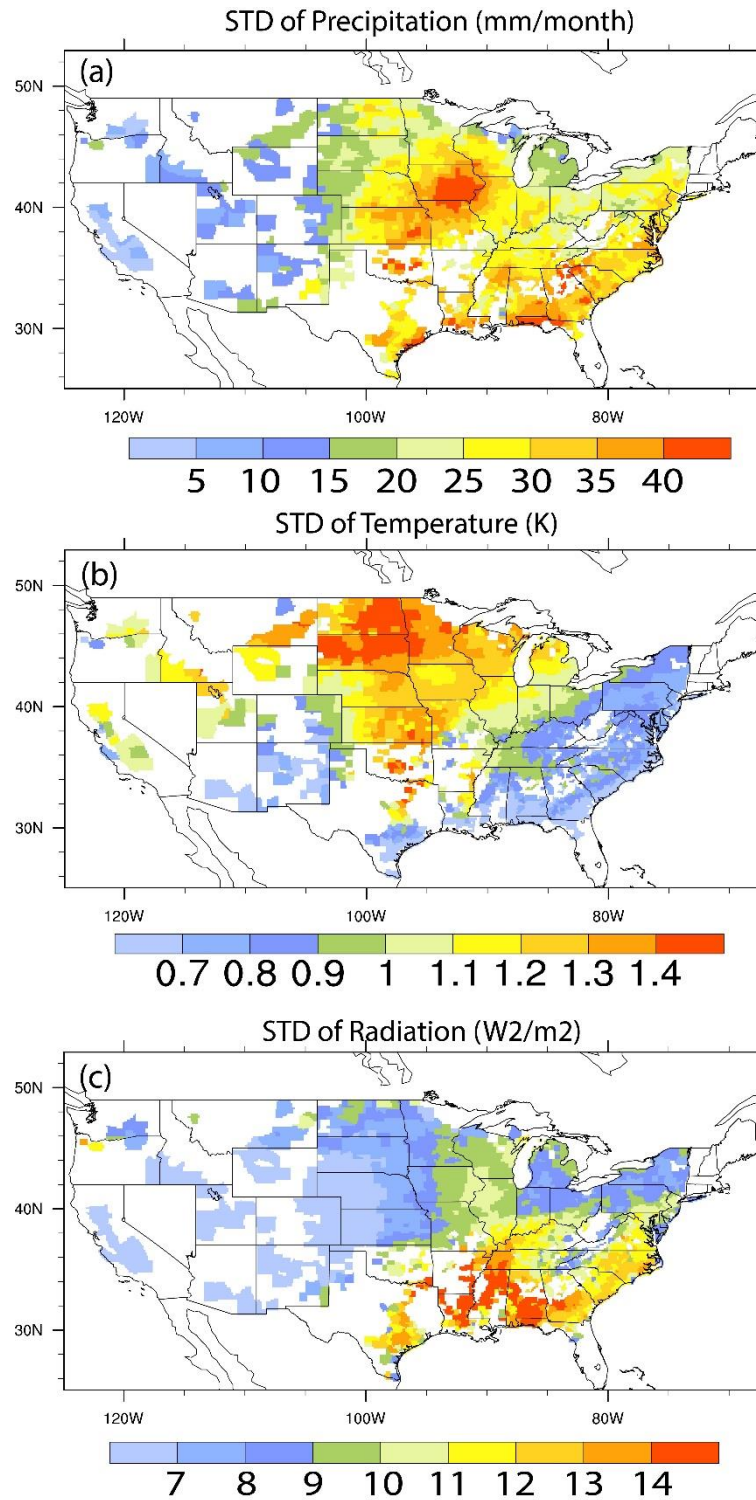


Figure S2 Inter-annual variability (standard deviation, STD) of county-level (a) precipitation, (b) temperature and (c) radiation for 1983-2012. Figure was created by NCAR Command Language¹

Crop yield sensitivity to Precipitation

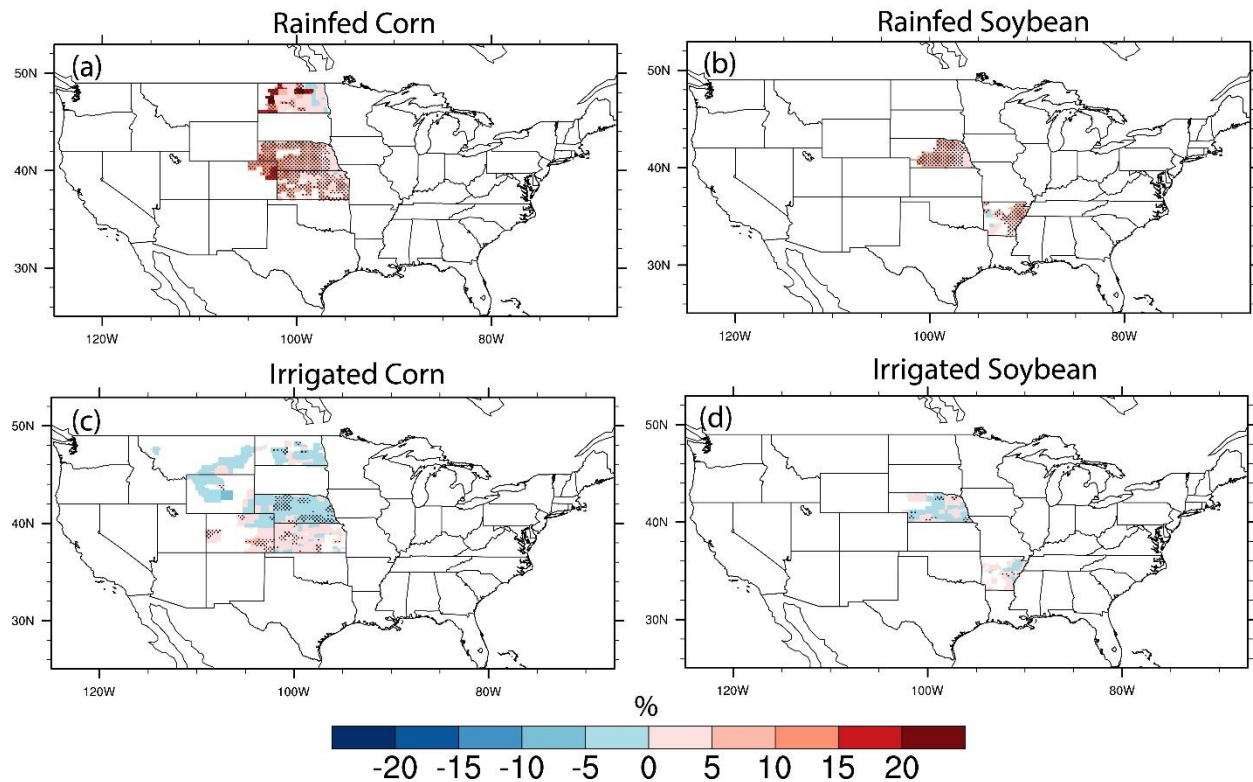


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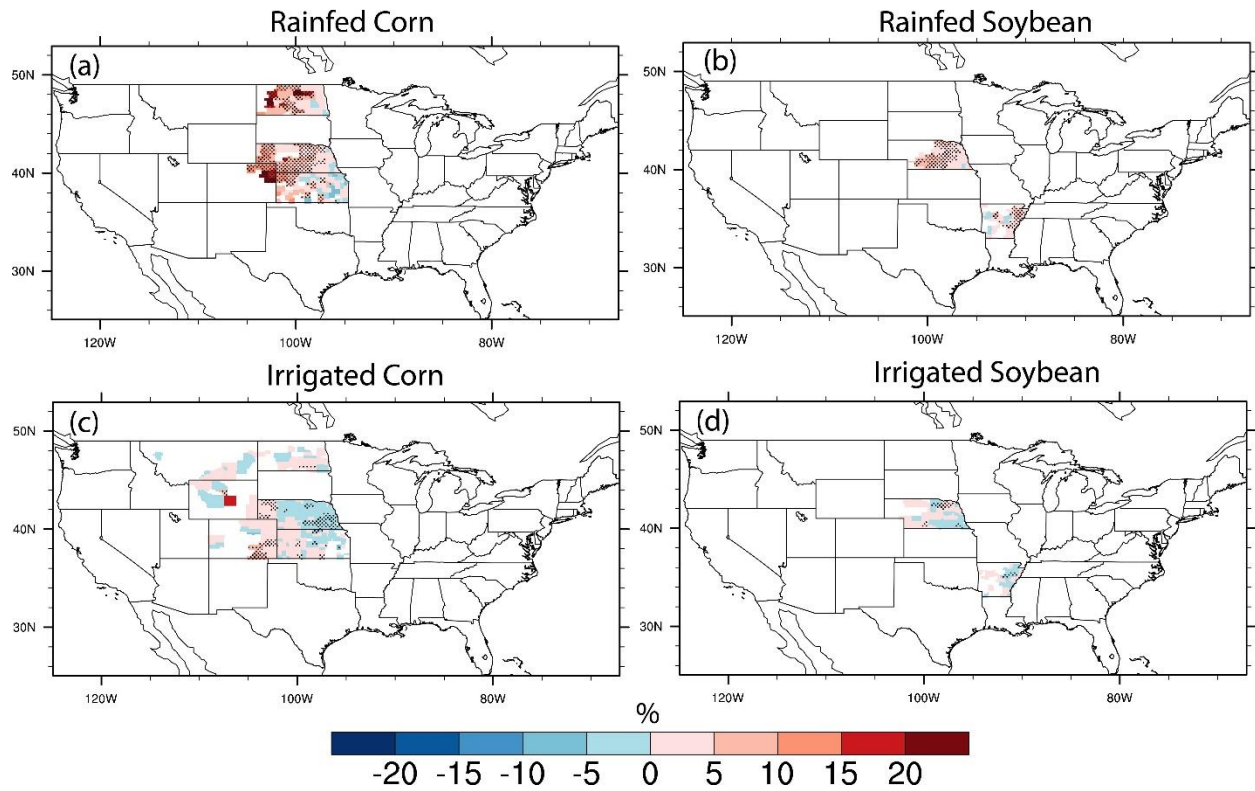


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References

1. The NCAR Command Language (Version 6.1.2) [Software]. (2013). Boulder, Colorado: UCAR/NCAR/CISL/VETS. <http://dx.doi.org/10.5065/D6WD3XH5>.