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## Assimilating MCWLA-Wheat by multi-source remote sensing data to quantify regional agriculture drought risk

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More and more evidences show that the global drought is increasing frequently and intensively, so how to deal with the drought risk and reduce its impact has become a hot spot, and many organizations and scholars have carried out numerous researches. However, such studies were lack in quantitative analysis on the link between the monitoring results and the actual loss, and application on large-scale areas. Due to their better understanding crop disaster mechanism processes, crop growth models have greater potential in quantitatively assessing agricultural meteorological disasters. However, the research on agricultural drought based on assimilated remote sensing data and crop model at the regional scale is still scarce. This study addresses a regional-scale agricultural drought monitoring for winter wheat in north China, by assimilating ESA CCI soil moisture and GLASS-LAI data into MCWLA-Wheat model to generate surface drought indices to characterize the agriculture drought. It was found that the derived drought index did improve monitoring agricultural drought during the critical growth stages. The results of this study will enhance our understanding of drought risk during critical stages and benefit the related managers to design reasonable countermeasures.