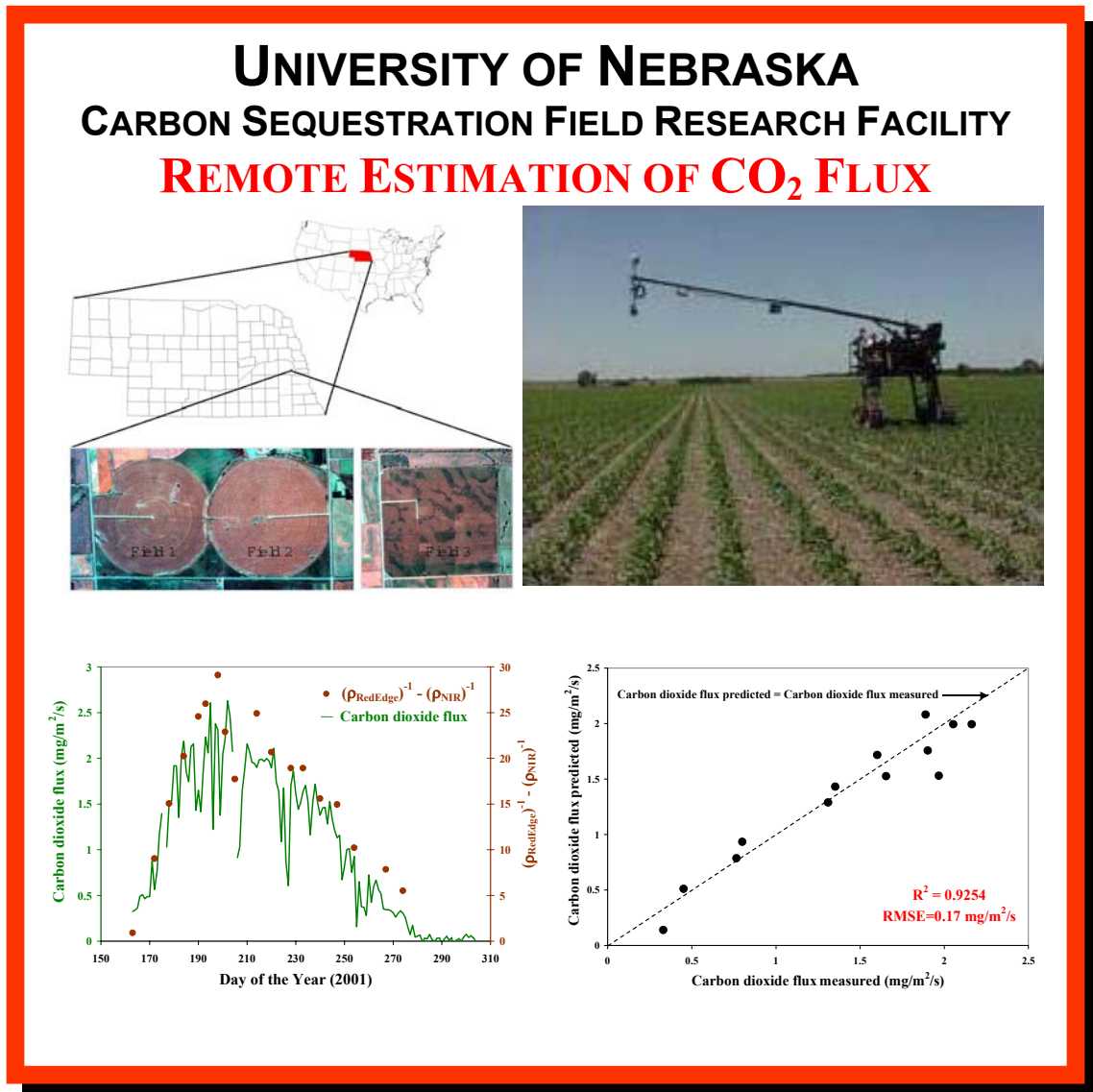


CALMIT Remote-Sensing Research Relating to Carbon Sequestration

There is considerable interest in assessing the magnitude of carbon sources and sinks in terrestrial ecosystems using remote sensing techniques. We developed a novel technique to remotely assess carbon dioxide exchange in maize using reflectances (ρ) in two spectral channels either in the red edge near 700 nm or in the green around 550 nm and the NIR (beyond 750 nm). Differences of reciprocal reflectances $[(\rho_{\text{RedEdge}})^{-1} - (\rho_{\text{NIR}})^{-1}]$ and $[(\rho_{\text{Green}})^{-1} - (\rho_{\text{NIR}})^{-1}]$ accounted for more than 90 percent of the variability in mid-day carbon dioxide flux (canopy photosynthesis) of irrigated maize. The technique was validated by an independent data set.



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