

Rashida Thomas, Atmospheric Science

Year in School: Sophomore
Faculty Mentor: Dr. Patrick S. Market, Soil, Environmental, & Atmospheric Sciences
Funding Source: William Boatright Endowment

Examining instability in Midwestern snowstorms with lightning and thunder

12 individual cases of thundersnow were examined in order to determine those common atmospheric stability characteristics that attend such storms. We found that most thundersnow events have high bases (between 10K and 15K feet above the ground), and are shallow (less than 100 mb deep). Stability indices typically used to define regions of summer thunderstorm activity were quite low (e.g., mean CAPE = 69 J/kg; Mean LI = 1.6C; Mean KI = 11), but inflated with respect to surrounding stations. These results add significantly to the predictability of thundersnow.