QLCS Tornadoes of 2014Jun30

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On the night of June 30/July 1, 2014, a line of severe thunderstorms with widespread winds in excess of 70mph produced 11 tornadoes across the NWS Northern Indiana CWA. This event had a complex evolution as thunderstorms developed across Iowa during the early afternoon of June 30th. The storms organized into a forward propagating QLCS and tracked east-northeast toward Lake Michigan by early evening. The lead portion of this system split and lifted northeast while southwestern flank reorganized, yet quickly outran better shear and became outflow dominant before dissipating over northwest Indiana. This left behind a pronounced southwest-northeast oriented outflow boundary across eastern Illinois and northern Indiana. New convective storms rapidly developed and intensified further west along a prefrontal trough in eastern Iowa and northwestern Illinois and organized into a second QLCS. It was this second system that accelerated eastward into northern Indiana and southwest lower Michigan the night of June 30th that resulted in the 11 tornadoes embedded within large swaths of damaging straight line winds. This presentation will examine some of the interesting aspects of the mesoscale evolution of this event, warning decision making considerations including application of research techniques to operations, and the challenging task of damage surveys for QLCS tornadoes.