



Lightning Maps and Resistivity Volumes

DML can calculate resistivity volumes from electrical measurements in exclusively licensed lightning data bases and fit them to any existing or new 3-D seismic bin spacing anywhere in the continent U.S. The example to the left is our first resistivity volume at 100 meter bin spacing, covering the Houston area. The top map shows lightning Peak Current. The orange line represents a Cretaceous transform fault, separating lower Peak Current on the west from higher Peak Current on the East. This transverse fault has controlled the location of the Brazos River for a long time, is why the Brazos is the straightest and fastest river in Texas, and is why there is a straight line Brazos River Aquifer along the river channel. The middle left map shows a zoom on the Peak Current Map, with a Lidar image overlaid showing the resolution the top map can be displayed at, and showing how the Long Point Fault wraps around one of the lightning strike attribute clusters. The 3-D image is created from the resistivity volume calculated directly from the electrical measurements in the lightning database. The bottom section is an uncalibrated depth slice from the resistivity volume, with fault interpretations from Peak Current, Lightning Density, and other lightning analysis maps overlaid. Key salt domes are shown on both the top and bottom maps.

