



## **Antenna Advancement for EM Earthquake Precursor Detection**

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With the exception to the animal kingdom's inherent earthquake precursor detection, a major leap in antenna detection technology is incredibly warranted with an ever-growing human population; thus, a greater refinement was made to advancing passive loop antenna design. Extensive research went into generating a high inductance, winding a unique ratio of turns per layer, designing an intricate pre-amplifier, and attenuating unwanted signal interference while maintaining a necessity of mobility. As with all electrically small loop antennae, loop antennae detect in the plane of the antenna coil: hence, a major, yet novel, modification was made to encapsulate a majority of the coil face within an electromagnetic shield, minus a  $1/10$ th section ( $\pi/5$  arc) for the attachment of an innovative wave guide. This wave guide was situated parallel to the ground for incoming signal investigation with excessive EM waves negated from all other planes of the antenna housing. In effect, this loop antenna also swivels  $360^\circ$  on a base attaining a new radio direction finding (RDF) technique deemed Point & Detect (PND), and results will be forthcoming and presented at the 2019 European Geosciences Union.