<table>
<thead>
<tr>
<th><strong>Title</strong></th>
<th>Electromagnetic vector sensors</th>
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<tr>
<td><strong>Author(s)</strong></td>
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**Introduction**

A vector sensor consists of three orthogonal dipoles and three orthogonally oriented loops.

- It measures direction of arrival (DOA).
- It measures all six components of incident electromagnetic wave; hence, all available degrees of freedom are exploited.
- It performs better than scalar array antennas in terms of accuracy.

**Distributed Vector Sensors**

Why distributed?

- Impossibility to fabricate the collocated 6 components at a single point in space.
- Strong mutual coupling among the components.

**Low Grazing Angle Applications**

- The zenith angle, $\theta$ is 90° (the elevation angle is 0°).
- The 3D transformation formula is simplified to 2D.

**Experiment Apparatus**

- HP 8657A Signal generator
- Transmitter
- 2D vector sensor
- Agilent MSO6114A Oscilloscope
- PC with signal processing software
- Loop antenna

**Simulated Result**

- Signals
- Incident angles and errors

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Project Title: Study of Electromagnetic Vector Sensors for Low Grazing Angle Source Localization
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