

Performance comparison between the magnetic direction finding technique and time of arrival technique

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A study was carried out in order to understand the strengths and weaknesses of two popular lightning locating systems namely the wide band magnetic direction finding category (sometimes referred to as IMPACT sensors) and the time of arrival category (TOA sensors) which are used world-wide today. For IMPACT sensors, it has been shown that with three stations having angular accuracy limited to 2^0 to 3^0 , strike location can be reconstructed up to a few km's near the centre of the network. The accuracy roll off gradually when one moves away from the antennas extending up to few tens of km's over 400 km distance. The estimates of the location accuracy in TOA systems show that they are accurate up to 300 m near the network centre which degrade up to a few km's for large distances (over 400 km).