

**Hamza Jemaiel, "Application of the Electromagnetic Time Reversal to the Detection of Lightning Discharges", 2014.**

*Abstract*

Time reversal has received increasing attention in the fields of acoustics and electromagnetic applications in the past few decades following the work of Fink and co-workers. Time reversal or T-symmetry describes the symmetry of physical laws under a time reversal transformation.

Electromagnetic Time Reversal has been recently applied to various fields of electrical engineering, and in particular to detect and locate discharges location.

In this project, the applicability of the electromagnetic time reversal to lightning location is further tested using experimental data associated with lightning strikes to the CN Tower in Toronto, and lightning location networks.