

Abstract

Hamza Khounat, "FDTD-based study of the influence of concrete on the transient voltages and currents of a system equipped with SPDs for lightning protection", 2018

In this project, we study of the influence of concrete on the transient voltages and currents of a system equipped with surge protective devices (SPD). An impulse generator injects a lightning impulse into a system consisting of of multiple SPDs and a terminal device. The connecting cables pass through multiple concrete blocks at different locations. We measure the currents and voltages of all the devices. It is found that the concrete attenuates slightly the lightning currents. H,owever since the lightning current has a frequency bandwidth which do not extend beyond 1 MHz or so, concrete offers a limited attenuation of this type of impulses (compared to NEMP and IEMI).