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RENDERING THE MEASUREMENTS OF THE NEAR FIELDS ASSOCIATED WITH ESD EXPERIMENTS

BY

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Abstract. Our paper tries to find a veridical explanation for the measurements upon the magnetic and electric field values on the horizontal and vertical coupling plane for different excitations and grounding topologies and raises a query regarding the conditions that must be imposed in order to enhance the repeatability and the confidence in ESD tests performed while strictly respecting the norms, [1]. Our measurements demonstrated that there is not volumetric symmetry of the field distribution around the ESD generator, which may alter the results of an ESD experiment. Two possible motivations for this happening could be the intrinsic construction of the discharge RC circuit and the high voltage relay (obviously, they have not spherical regularity) and the settlement of the return path plus the high voltage cable of the discharge simulator. It must also be mentioned that in the calibration set-up the positioning of these cables can be defined. From these reasons, the orientation of the tested device versus the Pelegrini target and the ESD simulator is important, being desirable some more settlements in the standard for testing the immunity to ESD, in order to assure the repeatability of the experiments and the improvement of the associated confidence degree.

Keywords: magnetic and electric near fields, ESD immunity test