OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG

CHAIR OF ELECTROMAGNETIC COMPATIBILITY

IP/MT Analysis of the Transient Shielding Effiency According to Schelkunoff #MS

18.10.2017 - **Background and problem:** The theory of Schelkunoff to calculate the shielding effiency of a planar metallic wall is a standard tool for every EMC engineer to approximate the shielding effect of boxes or enclosures. The calculation done in the frequency domain, where a harmonic excitation is assumed. Nevertheless, measurement methods and characteristic to assess the transient shielding efficiency for certain pulses are also proposed in the literature.

Task: In the scope of this work, the practicability to convert the well-known Schelkunoff theory from frequency into time domain shall be analyzed. At this, a direct approach in the time domain as well as a transform from frequency into time domain shall be investigated. This inverse Fourier transform can be done analytically or numerically. The proposed procedure shall also be teste for some typical pulse shapes of the exciting external field.

- Literature survey about the existing Schelkunoff theory
- Literature survey for transient assessment criteria of the shielding efficiency
- Development of a direct transient approach for analyzing the shielding efficienty
- Transform of the existing frequeny-domain solution into the time domain
- Test of the procedure for some standard pulses

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Nächste Meldung ►