

**28<sup>th</sup>**  
**International Conference**  
**on Lightning Protection**  
**(ICLP 2006)**

September 18-22, 2006



**KANAZAWA-JAPAN**

**Volume II**

***Proceedings***



## 28th International Conference on Lightning Protection



# Lightning Induced Voltages on LV Distribution Lines

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**Abstract** - This paper presents the results of a study conducted with the aim of evaluating the characteristics of the overvoltages induced on low-voltage lines by indirect strokes. The voltages transferred from the primary through the distribution transformers are also dealt with. The calculations of lightning induced voltages are performed by means of the "Extended Rusck Model" (ERM), a model that has been validated through many comparisons between measured and calculated induced voltages. The paper discusses the behaviour of the lightning induced voltages, in terms of magnitude and waveform, regarding parameters such as the stroke current front time, the grounding resistance and the distance between line and lightning strike point, taking into account the effect of the loads connected to the low-voltage network.

**Index Terms** - electromagnetic induction, induced voltages, lightning, low-voltage networks, power distribution lines, transferred voltages.

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