

## Simberian News: October 31, 2017

«GreetingLine»

Here is an update on what is new at Simberian: **(1) Material parameters identification with causal Huray-Bracken roughness model; (2) Unified conductor roughness model; (3) New “How interconnects work” videos.**

(1) **New causal Huray-Bracken model was recently added in Simbeor 2017.02.** We have observed that some of our customers did the material identification with [GMS-parameters or SPP Light techniques](#) with high-quality measurements and proper board cross-sectioning, but ended up with simulated TDR impedance consistently smaller by 2-3 Ohm comparing to the observed on TDR. Possible explanation is the increase of the conductor internal inductance due to conductor roughness. One of the roughness models that predicts such increase is the Huray-Bracken model – see the description and practical identification case in [App Notes #2017\\_03 and 2017\\_04](#). Possible explanation of the additional inductance with magnetic field and current visualization is provided in the [demo-video #2017\\_09](#).

(2) Simberian’s founder Yuriy Shlepnev has recently presented **new unified approach to the conductor roughness modeling at the IEEE EPEPS’2017** conference in San Jose. If you missed it, Yuriy’s paper and presentation are now available at the Simberian web site (in Knowledge Base or App Notes sections). Six roughness correction coefficients (including Huray-Bracken) are written in the unified form. Multiplicative and additive extensions are proposed to improve the accuracy. Best of all, [all those models are now available in Simbeor 2017.02!](#)

(3) **We also continue our educational series “How Interconnects Work...”** with visualization of electromagnetic fields and power flow in different cases with non-solid reference planes (cases of perforated and split planes) [at the demo video section of our web site](#) or at [Simbeor channel on YouTube](#). Subscribe to the Simbeor channel and do not miss new upcoming videos and have some fun learning the electromagnetics!

**Happy autumn days!**  
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