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Tutorial lecture on Modeling and simulation of high-speed interconnects: approaches, challenges, and solutions

Original

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S.Grivet-Talocia and P.Triverio, SPI2010 Tutorial lecture, 9 May 2010, Hildesheim, Germany			
Example: passive vs non-passive data			
	Non-passive data	Passive data	
wector Fitting model order			
6			
12			
18			
	÷		
0			
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S.Grivet-Talocia and P.Triverio, SPI2010 Tutorial lecture, 9 May 2010, Hildesheim, Germany			
Example: passive vs non-passive data			
	Non-pas	sive data	Passive data
Vector Fitting model order	Passivity not enforced		
6	0.280		
12	0.020		
18	0.017		
	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX		
	passive!		
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S.Grivet-Talocia and P.Trive	S.Grivet-Talocia and P.Triverio, SPI2010 Tutorial lecture, 9 May 2010, Hildesheim, Germany			
Example: passive vs non-passive data				
	Non-passive data		Passive data	
Vector Fitting model order	Passivity not enforced	Passivity enforced		
6	0.280	0.23		
12	0.020	0.11		
18	0.017	0.13		
	×	×		
	Model is not passive!	Model not accurate!		
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S.Grivet-Talocia and P.Triver	Grivet-Talocia and P.Triverio, SPI2010 Tutorial lecture, 9 May 2010, Hildesheim, Germany			
Example: passive vs non-passive data				
	Non-passive data		Passive data	
Vector Fitting model order	Passivity not enforced	Passivity enforced	Passivity enforced	
6	0.280	0.23	0.240	
12	0.020	0.11	0.020	
18	0.017	0.13	0.012	
		END	Passive & accurate!	
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S.Grivet-Talocia and P.Triverio, SPI2010 T	S.Grivet-Talocia and P.Triverio, SPI2010 Tutorial lecture, 9 May 2010, Hildesheim, Germany		
Bibli	ography: Vector	Fitting	
<ul> <li>B. Gustavsen and A. responses by Vector I 1061, July 1999</li> </ul>	Semlyen, "Rational approx Fitting," IEEE Trans. Power I	imation of frequency domain Del., vol. 14, no. 3, pp. 1052–	
<ul> <li>"The VF Web Site" <u>htt</u></li> <li>D. Deschrijver, M. Mrd Multiport Systems Us <i>IEEE Microwave and</i> 2008.</li> </ul>	<u>p://www.energy.sintef.no/pro</u> pzowski, T. Dhaene, and D. ing a Fast Implementation of Wireless Components Letters	dukt/VECTFIT/index.asp De Zutter, "Macromodeling of of the Vector Fitting Method," s, vol. 18, no. 6, pp. 383–385,	
<ul> <li>S. Grivet-Talocia, "Pa IEEE Microwave and Nov. 2003</li> </ul>	ckage Macromodeling via T Wireless Components Letter	Time-Domain Vector Fitting" , s, pp. 472-474, vol. 13, n. 11,	
<ul> <li>Y.S. Mekonnen, J.E. Time/Frequency Data Atlanta, GA, Oct 29-31</li> </ul>	Schutt-Aine, "Fast Macromo a Using z-domain Vector-F I, 2007, pp. 47 – 50	deling Technique of Sampled itting Method", EPEP 2007,	
B. Nouri, R. Achar, M. Fitting for Macromode Data," <i>IEEE Workshop</i> France, May 2008.	Nakhla, D. Saraswat, "z-Dor ling High-Speed Modules Ch o on Signal Propagation on Ir	nain Orthonormal Vector aracterized by Tabulated nterconnects, Avignon,	
<ul> <li>B. Gustavsen and C. I Models of High Accura Advanced Packaging,</li> </ul>	Heitz, "Modal Vector Fitting: A acy with Arbitrary Terminal C vol. 31, no. 4, pp. 664-672, N	A Tool for Generating Rational onditions", <i>IEEE Trans.</i> November 2008	
	94	·····	









