

LISTA DE LUCRĂRI – Profesor Lucia Dumitriu

A – teza de doctorat

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B – Carti si capitole in carti

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11. Lucia Dumitriu, M. Iordache, in DESIGN OF ANALOG CIRCUITS THROUGH SYMBOLIC ANALYSIS, Chapter 9, "Sensitivity Computation Based on Auxiliary Circuits", Editors: Mourad Fakhfakh, Esteban Tlelo-Cuautle and Francisco V. Fernandez, Bentham Science Publishers, Oak Park, Illinois, USA, pp. 228-262, in press.

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F – Contracte

Contracte ca director:

1. ***Analiza simbolică a circuitelor electrice*** - 1998-2000. Beneficiar: CNCSIS - Ministerul Educației Naționale.

Faza I/1998, contract nr. 32, nr. temă 41.

Faza II/1999, contract nr. 33084, nr. temă 37.

Faza III/2000, contract nr.2-20-08, nr. temă 1277.

Obiective stiintifice realizate:

- Elaborarea unei metode noi de analiza simbolica a circuitelor analogice liniare si a celor neliniare linarizate pe portiuni in domeniul frecventei complexe.
- Generalizarea formulelor topologice cu parametri omogeni pentru generarea simbolica a functiilor de circuit.
- Elaborarea unei metode rapide de enumerare a tuturor arborilor unui graf asociat circuitului, prin reprezentarea pe nivele a grafului.
- Elaborarea unei metode rapide de generare a factorului de semn.
- Implementarea metodelor si tehnicilor elaborate intr-un software performant.

2. ***Tehnici de înaltă performanță folosite în proiectarea asistată de calculator a circuitelor analogice*** -2002-2004. Beneficiar: CNCSIS – Ministerul Educației și Cercetării.

Faza I-2002, contract nr. 3378-23.07.2002, nr. Temă 12, Cod CNCSIS 354.

Faza II/2003, contract nr. 33552/01.07.2003, nr. Temă 20, Cod CNCSIS 468.

Faza III-2004, contract nr. 33380/29.06.2004, nr. Temă 34, Cod CNCSIS 468.

Obiective stiintifice realizate:

- Identificarea prin studiu comparat a metodei optime de generare in forma simbolica a functiilor de circuit.
- Elaborarea unei metode de descompunere a unui circuit de mari dimensiuni in subcircuite ale caror solutii agregate sa ofere solutia intregului circuit.

- Elaborarea unei metode de generare a funcțiilor de transfer pentru circuite cu elemente în exces.
- Analiza comparată a aspectelor procedurale și de calcul implicate de tehnicile de generare a funcțiilor de circuit și de calculul al polilor și, respective, a valorilor proprii.
- Implementarea metodelor și tehnicilor dezvoltate în cadrul cercetării în produse software performante.

3. **Metode moderne de simulare a circuitelor analogice integrate în regim periodic**
- 2005-2007. Beneficiar. CNCSIS – Ministerul Educației și Cercetării.

Faza I-2005, contract nr. 27692/14.03.2005, nr. Temă 18, Cod CNCSIS 292.

Faza II-2006, contract nr. 139 GR/02.06.2006, nr. Temă 37, Cod CNCSIS 292.

Faza III-2007, contract nr. 139 GR/02.06.2006, nr. Temă 37, Cod CNCSIS 292.

Obiective științifice realizate:

- Îmbunătățirea unora din metodele actuale de simulare a regimului periodic al circuitelor neliniare: elaborarea unui algoritm de generare a ecuațiilor hibride ale circuitelor analogice neliniare corespunzătoare fiecărei pulsații de intermodulație; îmbunătățirea metodei balantei armonice prin combinarea acesteia cu metoda celor mai mici pătrate și cu algoritmul Newton-Raphson.
- Elaborarea unei proceduri eficiente de analiză a CI-RF în regim periodic prin utilizarea unor scări multiple de timp și a algoritmilor implicați de integrare după cele două variabile de timp.
- Implementarea metodei de analiză 2D a regimului periodic al CI-RF într-un program de calcul performant.
- Utilizarea analizei simbolice pentru simularea circuitelor integrate de radiofrecvență.

Contracte ca membru:

1. Regimul periodic permanent al circuitelor trifazate neliniare. Faza a II-a. Elaborarea programelor de calcul. Beneficiar: CNSCU- Ministerul Învățământului, 1994, nr. 2-93-8/23-07-93, director contract- conf.dr.ing. F. Constantinescu.
2. Analiza și proiectarea pe calculator a circuitelor electrice neliniare de mari dimensiuni. Beneficiar: CNSCU - Ministerul Învățământului, 1995, nr.2-95-15/15-05-95, director contract- prof.dr.ing. M. Iordache.
3. Analiza și proiectarea pe calculator a circuitelor electrice neliniare de mari dimensiuni, Faza 1996: Elaborarea unor metode noi și eficiente de analiză pe calculator a circuitelor electrice, Beneficiar Ministerul Educație și Învățământului, director contract- prof.dr.ing. M. Iordache.
4. Analiza și proiectarea pe calculator a circuitelor electrice neliniare. Faza I/1997, contract nr. 7001, nr. temă 4. Beneficiar: CNSCU - Ministerul Educației Naționale, - director contract- prof.dr.ing. M. Iordache.
5. Analiza și proiectarea pe calculator a circuitelor electrice neliniare. Faza II/1998, contract nr. 32, nr. temă 40. Beneficiar: CNSCU - Ministerul Educației Naționale, - director contract- prof.dr.ing. M. Iordache.

6. Analiza și proiectarea pe calculator a circuitelor electrice neliniare. Faza III/1999, contract nr. 33084, nr. temă 71. Beneficiar: CNCSIS - Ministerul Educației Naționale, - director contract- prof.dr.ing. M. Iordache.
7. Metode simbolice de învățare în ingineria electrică și electronică, Grant finanțat de Banca Mondială și Guvernul României. PIP-1999, director contract- prof. dr. ing. F. Constantinescu.
8. Metode simbolice de învățare în ingineria electrică și electronică, Grant finanțat de Banca Mondială și Guvernul României, 2000 - director contract - prof.dr.ing. Florin Constantinescu.
9. Analiza calitativă a circuitelor electrice și electronice. Faza I/2000, contract nr. 3-20-08, nr. temă 1155. Beneficiar: CNCSIS - Ministerul Educației Naționale, - director contract- prof.dr.ing. M. Iordache.
10. Analiza calitativă a circuitelor electrice și electronice. Faza II/2001, contract nr. 34967/2001, nr. temă 109. Beneficiar: CNCSIS - Ministerul Educației Naționale, - director contract- prof.dr.ing. M. Iordache.
11. Analiza calitativă a circuitelor electrice și electronice. Faza III/2002, contract nr. 34967/2001, nr. temă 109. Beneficiar: CNCSIS - Ministerul Educației Naționale, - director contract- prof.dr.ing. M. Iordache.
12. Simularea regimurilor dinamice neliniare ale circuitelor analogice integrate. Faza I/2003, contract nr. 40528/05.11.2003, nr. temă 20, Cod CNCSIS 90, Beneficiar: CNCSIS - Ministerul Educației și Cercetării, - director contract- prof.dr.ing. M. Iordache.
13. Simularea regimurilor dinamice neliniare ale circuitelor analogice integrate. Faza II/2004, contract nr. 40528/05.11.2003, nr. temă 46, Cod CNCSIS 90, Beneficiar: CNCSIS - Ministerul Educației și Cercetării, - director contract- prof.dr.ing. M. Iordache.
14. Simularea regimurilor dinamice neliniare ale circuitelor analogice integrate. Faza III/2005, contract nr. 40528/05.11.2003, nr. temă 56, Cod CNCSIS 90, Beneficiar: CNCSIS - Ministerul Educației și Cercetării, -director contract- prof.dr.ing. M. Iordache.
15. Generarea de macromodele comportamentale pentru circuitele analogice integrate. Faza I/2006, contract nr. 36 GR/02.06.2006, nr. temă 15, Cod CNCSIS 38, Beneficiar: CNCSIS - Ministerul Educației și Cercetării, - director contract- prof.dr.ing. M. Iordache.
16. Creșterea coeficientului de utilizare a echipamentelor electrotehnice prin utilizarea de noi materiale electroizolante în clasa de izolație H. Program CEEX, Modul I, contract nr. 258-11.09.2006, Etapa I/2006 – director contract- prof.dr.ing. M.Iordache.
17. Generarea de macromodele comportamentale pentru circuitele analogice integrate. Faza II/2007, contract nr. 36 GR/02.06.2006, nr. temă 15, Cod CNCSIS 38, Beneficiar: CNCSIS - Ministerul Educației și Cercetării, - director contract- prof.dr.ing. M. Iordache.
18. Creșterea coeficientului de utilizare a echipamentelor electrotehnice prin utilizarea de noi materiale electroizolante în clasa de izolație H. Program CEEX, Modul I, contract nr. 258-11.09.2006, Etapa II/2007 – director contract- prof.dr.ing. M.Iordache.

19. Generarea de macromodele comportamentale pentru circuitele analogice integrate. Faza III/2008, contract nr. 36 GR/02.06.2006, nr. temă 15, Cod CNCISIS 38, Beneficiar: CNCISIS - Ministerul Educației și Cercetării, - director contract- prof.dr.ing. M. Iordache.
20. Creșterea coeficientului de utilizare a echipamentelor electrotehnice prin utilizarea de noi materiale electroizolante în clasa de izolație H. Program CEEEX, Modul I, contract nr. 258-11.09.2006, Etapa III, Etapa IV/2008 – director contract– prof.dr.ing. M.Iordache.
21. Theory of wireless power transfer. Beneficiar: Electricite de France (EDF), contract nr. 8610-BVW-4300225334, 2010, 2011 – director contract- prof.dr.ing. M.Iordache.