

Tom Kuusela - List of publications

Only referee processed articles in international journals or books

A. Time series analysis of biosignals

1996

A1. T. T. Jartti, K. U. O. Tahvanainen, T. J. Kaila, **T. A. Kuusela**, A. S. Koivikko, T. T. Vanto, I. A. T. Välimäki; *Cardiovascular autonomic regulation in asthmatic children evidenced by spectral analysis of heart rate and blood pressure variability*, Scand J Clin Lab Invest **56** (1996) 545-554

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A2. R. K. Vesalainen, K. U. O. Tahvanainen, T. J. Kaila, I. M. Kantola, **T. A. Kuusela**, D. L. Eckberg; *Effects of low-dose transdermal scopolamine on cardiopulmonary autonomic function in healthy young subjects*, Clin Physiol **17** (1997) 135-148

A3. K. E. Airaksinen, K. U. O. Tahvanainen, **T. A. Kuusela**, H. V. Huikuri, M. J. Niemelä, P. Karjalainen, D. L. Eckberg; *Cross spectral analysis in assesment of baroreflex gain in patients with coronary artery disease*, Ann Noninv Electrocardiography **2** (1997) 229-235

A4. T. Jartti, T. Kaila, K. Tahvanainen, **T. Kuusela**, T. Vanto, I. Välimäki; *The acute effects of inhaled salbutamol on the beat-to-beat variability of heart rate and blood pressure assted by spectral analysis*, Br J Clin Pharmacol **43** (1997) 421-428

A5. T. Jartti, T. Kaila, K. U. O. Tahvanainen, **T. Kuusela**, T. T. Vanto, I. A. T. Välimäki; *Altered cardiovascular autonomic regulation after 2-week inhaled salbutamol treatment in asthmatic children*, Eur J Pediatrics **156** (1997) 883-888

A6. C. A. Morillo, D. L. Eckberg, M., K. A. Ellenbogen, L. A. Beightol, J. B. Hoag, K. U. Tahvanainen, **T. Kuusela**, A. M. Diedrich; *Vagal and sympathetic mechanisms in patients with orthostatic vasovagal syncope*, Circulation **96** (1997) 2509-2513

A7. A. Ylitalo, K. E. J. Airaksinen, K. U. O. Tahvanainen, **T. A. Kuusela**, M. J. Ikäheimo, A. Rantala, M. Lilja, H. V. Huikuri; *Baroreflex sensitivity in drug-treated systemic hypertension*, Am J Cardiol **80** (1997) 1369-1372

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A8. R. K. Vesalainen, T. J. Kaila, I. M. Kantola, K. U. O. Tahvanainen. **T. A. Kuusela**, D. L. Eckberg; *Low-dose transdermal scopolamine in mild essential hypertension*, J Hypertens **16** (1998) 321-329

A9. T. T. Jartti, **T. A. Kuusela**, T. J. Kaila, K. U. O. Tahvanainen, I. A. T. Välimäki; *Dose-response effects of terbutaline on the variability, approximate entropy and fractal dimension of heart rate and blood pressure*, Br J Clin Pharmacol **45** (1998) 277-285

A10. Tuomas T. Jartti, Timo J. Kaila, Kari U.O. Tahvanainen, **Tom A. Kuusela**, Timo T. Vanto, Ilkka A.T. Välimäki; *Altered cardiovascular autonomic regulation after four-week inhaled salmeterol treatment in asthmatic children*, Clin Physiol **4** (1998) 345-353

A11. J. E. K. Hartikainen, K. U. O. Tahvanainen, **T. A. Kuusela**; *Short-Term Measurement of Heart Rate Variability*, a chapter in the textbook *Clinical guide of cardiac autonomic tests*, ed. Marek Malik, Kluwer Academic Publishers, London (1998)

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A12. H. Scheinin, A. Helminen, S. Huhtala, P. Grönroos, J. A. Bosch, **T. Kuusela**, J. Kanto, T. Kaila; *Spectral analysis of cardiovascular variability as a quantitative measure of parasympatholytic effect – integrated pharmacokinetics and pharmacodynamics of three anticholinergic drugs*, *Ther Drug Monit* **21** (1999) 141-151

A13. W. H. Cooke, J. B. Hoag, A. A. Crossman, **T. A. Kuusela**, K. U. O. Tahvanainen, D. L. Eckberg; *Human responses to upright tilt: a window on central autonomic integration*, *J Physiol* **517** (1999) 617-628

A14. L. Rudas, A. A. Crossman, C. A. Morillo, J. R. Halliwill, K. U. O. Tahvanainen, **T. A. Kuusela**, D. L. Eckberg; *Human sympathetic and vagal baroreflex responses to sequential nitroprusside and phenylephrine*, *Am J Physiol* **276** (1999) H1691 – H1698

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A15. I. Virtanen, O. Polo, P. Polo-Kantola, **T. Kuusela**, E. Ekholm; *The effect of estrogen replacement therapy on cardiac autonomic regulation*, *Maturitas* **37** (2000) 45-51

A16. W. H. Cooke, J. E. Ames IV, A.A. Crossman, J. F. Cox, **T. A. Kuusela**, K. U. O. Tahvanainen, B. D. Levine, L. B. Moon, C. G. Blomqvist, D. L. Eckberg; *Nine months in space: effects on human autonomic cardiovascular regulation*, *J Appl Physiol* **89** (2000) 1039-45

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A17. J. Penttilä, A. Helminen, T. Jartti, **T. Kuusela**, H. Huikuri, M. P. Tulppo, R. Cofféng, H. Scheinin; *Time domain, geometrical and frequency domain analysis of cardiac vagal outflow: Effects of various respiratory patterns*, *Clin Physiol* **21** (2001) 365-376

A18. K.E. J. Airaksinen, H. V. Huikuri, L. Huhti, **T. A. Kuusela**, K. U. O. Tahvanainen, M. Tulppo, T. H. Mäkikallio, D. W. Eckberg; *Effects of noradrenaline on human vagal baroreflexes*, *Ann Med* **33** (2001) 193-200

A19. K. K. Kalliokoski, **T. A. Kuusela**, P. Nuutila, T. Tolvanen, V. Oikonen, M. Teräs, T. E. S. Takala, M. J. Knuuti; *Perfusion heterogeneity in human skeletal muscle - fractal analysis of PET data*, *Eur J Nucl Med* **28** (2001) 450-456

A20. J. Penttilä, E. Syvälahti, S. Hinkka, **T. Kuusela**, H. Scheinin; *The effects of amitriptyline, citalopram and reboxetine on autonomic nervous system: a randomised placebo-controlled study on healthy volunteers*, *Psychopharmacology* **154** (2001) 343-349

A21. J. Penttilä, R. Vesalainen, A. Helminen, **T. Kuusela**, S. Hinkka, K. Rahi, T. Kaila, H. Scheinin; *Spontaneous baroreflex sensitivity as a dynamic measure of cardiac anticholinergic drug effect*; *J Auton Pharmacol* **21** (2001) 71-78

A22. H. M. Silver, K. U. O. Tahvanainen, **T. A. Kuusela**, D. L. Eckberg; *Comparison of vagal baroreflex function in nonpregnant women and in women with normal pregnancy, preeclampsia, or gestational hypertension*, *Am J Obstet Gynecol* **184** (2001) 1189-1195

A23. L. J. Badra, W. H. Cooke, J. B. Hoag, A. A. Crossman, **T. A. Kuusela**, K. U. O. Tahvanainen, D. L. Eckberg; *Respiratory modulation of human autonomic rhythms*, *Am J Physiol* **280** (2001) H2674-H2688

A24. J. Niño, J. C. Villar, K. U. O. Tahvanainen, M. Kähönen, **T. A. Kuusela**, C. A. Morillo; *Vasovagal susceptibility to nitrate or isoproterenol head-up tilt*, *Am J Cardiol* **88** (2001) 1326-1330

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A25. J. Nino. K. Tahvanainen, H. Uusitalo, V. Turjanmaa, N. Hutri-Kähönen, T. Kaila, A. Ropo, **T. Kuusela**, M. Kähönen; *Cardiovascular effects of ophthalmic 0.5% timolol aqueous solution and 0.1% timolol hydrogely*, Clin Physiol Funct Imaging **22** (2002) 1-8

A26. J. F. Cox, Kari U. O. Tahvanainen, **Tom A. Kuusela**, Benjamin D. Levine, William H. Cooke, Tadaaki Mano, Satoshi Iwase, Mitsuro Saito, Yoshiki Sugiyama, Andrew C. Ertl, Andre Diedrich, Julie H. Zuckerman, Lynda D. Lane, Chester A. Ray, Ronald J. White, James A. Pawelczyk, Jay C. Buckley, Jr, Friedhelm J. Baisch, C. Gunnar Blomqvist, David Robertson, Dwain L. Eckberg; *Influence of microgravity on astronauts' sympathetic and vagal responses to Valsava's manoeuvre*, J Physiol **538** (2002) 309-320

A27. W. H. Cooke, B. V. Reynolds, M. G. Yandl, J. R. Carter, K. U. O. Tahvanainen, **T. A. Kuusela**; *Effects of exercise training on cardiovagal and sympathetic responses to Valsalva's maneuver*, Med Sci Sports Exerc **34** (2002) 928-935

A28. **T. A. Kuusela**, T. T. Jartti, K. U. O. Tahvanainen, T. J. Kaila; *Nonlinear methods of biosignal analysis in assessing terbutaline-induced heart rate and blood pressure changes*, Am J Physiol **282** (2002) H773-H781

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A29. R. Virtanen, A. Jula, **T. Kuusela**, L.-M. Voipio-Pulkki; *Reduced Heart rate Variability in Hypertension: Associations with Plasma Renin Activity*, J Hum Hypertens **17** (2003) 171-179

A30. B. W. Rothlisberger, L. J. Badra, J. B. Hoag, W. H. Cooke, **T. A. Kuusela**, K. U. O. Tahvanainen, D. L. Eckberg; *Spontaneous 'baroreflex sequences' occur as deterministic functions of the breathing phase*, Clin Physiol Funct Imaging **23** (2003) 307-313

A31. P. M. Lehrer, E. V. Vaschillo, B. Vaschillo, S-E. Lu, D. L. Eckberg, R. Edelberg, W. J. Shih, Y. Lin, **T. A. Kuusela**, K. U. O. Tahvanainen, R. Hammer; *Heart rate variability biofeedback increases baroreflex gain and peak expiratory flow*, Psychosom Med **65** (2003) 796-805

A32. R. Virtanen, A. Jula, J. K. Salminen, J. Airaksinen, H. Helenius, **T. Kuusela**, L.-M. Voipio-Pulkki; *Anxiety and hostility are associated with reduced baroreflex sensitivity and increased beat-to-beat blood pressure variability*, Psychosom Med **65** (2003) 751-756

A33. **T. A. Kuusela**, T. Shepherd, J. Hietarinta; *Stochastic model for heart rate fluctuations*, Phys Rev E **67** (2003) 061904

A34. K. K. Kalliokoski, **T. A. Kuusela**, M. S. Laaksonen, J. Knuuti, P. Nuutila; *Muscle fractal vascular branching pattern and microvascular perfusion heterogeneity in endurance-trained and untrained men*, J Physiol **546.2** (2003) 529-535

A35. W. H. Cooke, J. R. Carter, **T. A. Kuusela**; *Muscle sympathetic nerve activation during the Valsalva maneuver: interpretive and analytical caveats*, Aviat Space Environ Med **74** (2003) 731-737

A36. **T. A. Kuusela**, T. J. Kaila, M. Kähönen; *Fine-structure of low frequency spectrum of heart rate and blood pressure*, BMC Physiology **3**:11 (2003)

A37. J. Penttilä, A. Helminen, T. Jartti, **T. Kuusela**, H. Huikuri, M. Tulppo, H. Scheinin; *Effect of cardiac vagal outflow on complexity and fractal correlation properties of heart rate dynamics*, Auton Autacoid Pharmacol **23** (2003) 173-179

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A38. I. Virtanen, O. Polo, T. Saaresranta, **T. Kuusela**, P. Polo-Kantola, E. Ekholm; *Medroxyprogesterone improves cardiac autonomic control in postmenopausal women with respiratory insufficiency*, *Respiratory Medicine* **98** (2004) 126-133

A39. K. Tahvanainen, J. Niño, P. Halonen, **T. Kuusela**, T. Laitinen, E. Länsimies, J. Hartikainen, M. Hietanen, H. Lindholm; *Cellular phone use does not acutely affect blood pressure or heart rate of humans*, *Bioelectromagnetics* **25** (2004) 73-83

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A41. W. H. Cooke, J. R. Carter, **T. A. Kuusela**; *Human cerebrovascular and autonomic rhythms during vestibular activation*, *Am J Physiol* **286** (2004) R838-R843

A42. R. Virtanen, A. Jula, H. Huikuri, **T. Kuusela**, H. Helenius, A. Ylitalo, L-M. Voipio-Pulkki, H. Kauma, A. Kesäniemi, J. Airaksinen; *Increased pulse pressure is associated with reduced baroreceptor sensitivity*, *J Hum Hypertens* **18** (2004) 247-252

A43. **T. A. Kuusela**, T. T. Jartti, K. U. Tahvanainen, T. J. Kaila; *The effects of terbutaline on peripheral vascular resistance and arterial compliance*, *J Cardiovasc Pharmacol* **44** (2004) 74-81.

A44. R. Virtanen, A. Jula, **T. Kuusela**, J. Airaksinen; *Beat-to-beat oscillations in pulse pressure*, *Clin Physiol Funct Imaging* **24** (2004) 304-309

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A45. T. Laitio, T. Kuusela, H. Huikuri, J. Jalonen, E. Kentala, T. Mäkikallio, H. Helenius, A. Pullisaar, J. Hartiala, H. Scheinin; *Prediction of postoperative myocardial ischemia by fractal heart rate dynamics – Response*. *Anesth Analg* **100** (2005) 289-290

A46. **T. A. Kuusela**, T. T. Jartti, K. U. O. Tahvanainen, T. J. Kaila; *Prolongation of QT interval by terbutaline in healthy subjects*, *J Cardiovasc Pharmacol* **45** (2005) 175-181

A47. H. Leon, J. C. Guzman, **T. Kuusela**, R. Dillenburg, M. Kamath, C. A. Morillo; *Impaired baroreflex gain in patients with inappropriate sinus tachycardia*, *J Cardiovasc Electrophys* **16** (2005) 64-68

A48. A. Lepoluoto, J. Niño, K. Tahvanainen, R. Ylitalo, **T. Kuusela**, M. Kähönen, T. Kaila; *Propranolol increases the complexity of heart rate fluctuations – a mode of antiarrhythmic action?*, *Int J Clin Pharm Ther* **43** (2005) 101-108

A49. U. Jaakkola, **T. Kuusela**, T. Jartti, U. Pesonen, M. Koulu, T. Vahlberg, J. Kallio; *The Leu7Pro polymorphism of preproNPY is associated with decreased insulin secretion, delayed ghrelin suppression, and increased cardiovascular responsiveness to norepinephrine during oral glucose tolerance test*, *J Clin Endocrinol Metab* **90** (2005) 3646-3652

A50. J. Penttilä, **T. Kuusela**, H. Scheinin; *Analysis of rapid heart rate variability in the assessment of anticholinergic drug effects in humans*, *Eur J Clin Pharmacol* **61** (2005) 559-565

A51. D. L. Eckberg, **T. A. Kuusela**; *Human vagal baroreflex sensitivity fluctuates widely and rhythmically at very low frequencies*, *J Physiol* **567** (2005) 1011-1019

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A52. J. Penttilä, A. Snapir, E. Kentala, J. Koskenvuo, J. Posti, M. Scheinin, H. Scheinin, **T. Kuusela**; *Estimation of cardiac output in a pharmacological trial using a simple method based on the arterial blood pressure signal waveform: a comparison with pulmonary thermodilution and echocardiographic methods*, Eur J Clin Pharmacol **62** (2006) 401-407

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A53. T. H. Tarkiainen, **T. A. Kuusela**, K. U. O. Tahvanainen, J. E. K. Hartikainen, P. Tiittanen, K. L. Timonen, J. Pekkanen, E. J. Vanninen; *Comparison of methods for editing of ectopic beats in measurements of short-term non-linear heart rate dynamics*, Clin Physiol Funct Imaging **27** (2007) 126-133

A54. A. I. Batchinsky, W. H. Cooke, **T. A. Kuusela**, L. C. Cancio; *Loss of complexity characterizes the heart-rate response to hemorrhagic shock in swine*, Crit Care Med **35** (2007) 519-525

A55. K. Tahvanainen, J. Niño, P. Halonen, **T. Kuusela**, T. Alanko, T. Laitinen, E. Länsimies, M. Hietanen, H. Lindholm; *Effects of cellular phone use on ear canal temperature measured by NTC thermistors*, Clin Phys Funct Imaging **27** (2007) 162-172

A56. M. Mäenpää, J. Penttilä, T. Laitio, K. Kaisti, **T. Kuusela**, S. Hinkka, H. Scheinin; *The effects of surgical levels of sevoflurane and propofol anesthesia on heart rate variability*, Eur J Anaesthesiol **24** (2007) 626-633

A57. T. Laitio, J. Jalonen, **T. Kuusela**, H. Scheinin; *Role of heart rate variability in risk stratification for adverse postoperative cardiac events*, Anesthesia & Analgesia **105** (2007) 1548-1560

A58. A. I. Batchinsky, L. C. Cancio, J. Salinas, **T. Kuusela**, W. H. Cooke, J. J. Wang, M. Boehme, V. A. Convertino, J. B. Holcomb; *Prehospital loss of R-R interval complexity is associated with mortality in trauma patients*, J Trauma **63** (2007) 512-518

A59. A. I. Batchinsky, W. H. Cooke, **T. A. Kuusela**, B. S. Jordan, J. J. Wang, L. C. Cancio; *Sympathetic nerve activity and heart rate variability during severe hemorrhagic shock in sheep*, Auton Neurosci **136** (2007) 43-51

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A61. L. C. Cancio, A. I. Batchinsky, J. Salinas, **T. Kuusela**, V. A. Convertino, C. E. Wade, J. B. Holcomb; *Heart-Rate Complexity for Prediction of Prehospital Lifesaving Interventions in Trauma Patients*, J Trauma **65** (2008) 813-819

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A63. E. Kauppila, E. Vanninen, **T. Kuusela**, S. Kaurijoki, L. Karhunen, K. H Pietiläinen, A. Rissanen, J. Kaprio, J. Tiihonen, J. Kuikka; *Cardiac repolarisation and striatal dopamine transporter function are interrelated*, Nuclear Medicine Communications **30** (2009) 713-717

A64. W.H. Cooke, C. A. Rickards, K. L. Ryan, **T. A. Kuusela**, V. A. Convertino; *Muscle sympathetic nerve activity during intense lower body negative pressure to presyncope in humans*, J Physiol **587** (2009) 4987-4999

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A65. M. Mäenpää, T. Laitio, **T. Kuusela**, J. Penttilä, K. Kaisti, S. Aalto, S. Hinkka-Yli-Salomäki, H. Scheinin; *Delta Entropy of Heart Rate Variability along Deepening Anesthesia*, Anesthesia & Analgesia **112** (2011) 587-592

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A66. *Methodological aspects of heart rate variability analysis*, a chapter in the textbook *Heart rate variability (HRV) signal analysis*, ed. Hector. M.V. Kamath, M.A. Watanabe, A.R.M. Upton, CRC Press (2013)

A67. *Methodological aspects of baroreflex sensitivity analysis*, a chapter in the textbook *Heart rate variability (HRV) signal analysis*, ed. Hector. M.V. Kamath, M.A. Watanabe, A.R.M. Upton, CRC Press (2013)

A68. A. Diedrich, A. A. Crossman, L. A. Beightol, K. U. O. Tahvanainen, **T. A. Kuusela**, A. C. Ertl, D. L. Eckberg; *Baroreflex physiology studied in healthy subjects with very infrequent muscle sympathetic bursts*, J. Appl. Physiol. **114** (2013) 203-210

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A70. D. L. Eckberg, A. Diedrich, W. H. Cooke, I. Biaggioni, J. C. Buckley, Jr, J. A. Pawelczyk, A. C. Ertl, J. F. Cox, **T. A. Kuusela**, K. U. O. Tahvanainen, T. Mano, S. iwase, F. J. Baisch, D. Robertson, B. D. Levine, B. Adams-Huet, C G. Blomqvist; *Respiratory modulation of human autonomic function on Earth*, J. Physiol. **594** (2016) 5611-5627

A71. D. L. Eckberg, A. Diedrich, W. H. Cooke, I. Biaggioni, J. C. Buckley, Jr, J. A. Pawelczyk, A. C. Ertl, J. F. Cox, **T. A. Kuusela**, K. U. O. Tahvanainen, T. Mano, S. iwase, F. J. Baisch, D. Robertson, B. D. Levine, B. Adams-Huet, C G. Blomqvist; *Respiratory modulation of human autonomic function. Long-term neuroplasticity in space*, J. Physiol. **594** (2016) 5629-5646

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A73. J. Burman, H. Lukkarinen, V. Elenius, S. Remes, **T. Kuusela**, T. Jartti; *Eucapnic voluntary hyperventilation test in children*, Clin. Physiol. Funct. Imaging **38** (2018) 718-720

A74. R. E. Kallionpää, A. Scheinin, R. A. Kallionpää, N. Sandman, M. Kallioinen, R. Laitio, T. Laitio, K. Kaskinoro, **T. Kuusela**, A. Revonsuo, H. Scheinin, K. Valli; *Spoken words are processed during dexmedetomidine-induced unresponsiveness*, British Journal of Anaesthesia **121** (2018) 270-280

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A76. J. Burman, V. Elenius, H. Lukkarinen, **T. Kuusela**, M. J. Mäkelä, O. Kesti, K. Väättäinen, M. Maunula, S. Remes, T. Jartti; *Cut-off values to evaluate exercise-induced asthma in eucapnic voluntary hyperventilation test for children*, Clin. Phys. Func. Imag. **40** (2020) 343-350

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B. Nonlinear electrical transmission lines

B1. **T. Kuusela**, J. Hietarinta, K. Kokko, R. Laiho; *Soliton experiments in a nonlinear electrical transmission line*, Eur. J. Phys. **8** (1987) 27-33

B2. **T. Kuusela**, J. Hietarinta; *Nonlinear electrical transmission line as a burst generator*, Rev. Sci. Instrum. **62** (1991) 2266-2270

B3. **T. Kuusela**; *Soliton experiments in a damped ac-driven nonlinear electrical transmission line*, Phys. Lett. A **167** (1992) 54-59

B4. **T. Kuusela**; *Soliton experiments in transmission lines*, Chaos, Solitons and Fractals **5** (1995) 2419-2463

C. Semiconductor physics

C1. R. Punkkinen, H. Ihantola, K. Jokinen, **T. Kuusela**, H. Arvela, H-P. Hedman, V. Saikku; *Multichamber processor for small semiconductor laboratories - The first results*, Physica Scripta **54** (1994) 51-53

C2. L. Heikkilä, **T. Kuusela**, H-P. Hedman, A. Pavlov, H. Ihantola; *AFM and STM investigations of electroluminescent SiO₂/Si superlattices prepared by chemical vapour deposition*, Diffusion and Defect Data Pt. B: Solid State Phenomena **54** (1997) 13-20

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C5. L. Heikkilä, **T. Kuusela**, H-P. Hedman; *Electroluminescence in Si/SiO₂ layer structures*, J. Appl. Phys. **89** (2001) 2179-2184

C6. L. Khriachtchev, L. Heikkilä, **T. Kuusela**; *Red photoluminescence of gold island films*, Appl. Phys. Lett. **78** (2001) 1994-1996

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D. Soliton systems

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D3. **T. Kuusela**, J. Hietarinta; *Numerical, experimental and analytical studies of the dissipative Toda lattice. I The behaviour of a single solitary wave*, Physica D **41** (1990) 322-340

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D5. K. E. Lönngren, P. Hansen, **T. Kuusela**; *A heuristic prediction of the number of solitons that are excited by an arbitrary potential*, Physica Scripta **46** (1992) 63-64

D6. **T. Kuusela**, J. Hietarinta, B. A. Malomed; *Numerical study of solitons in the damped ac-driven Toda lattice*, J. Phys. A **26** (1993) L21-L26

D7. **T. Kuusela**; *Ac-driven damped Toda lattice*, Comp. Math. Appl. **28** (1994) 327-351

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