

Axons' signals

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Horizons in neuroscience research ; 49 2023 / p. 33-73

<https://novapublishers.com/shop/horizons-in-neuroscience-research-volume-49/>

Comment on "Solitons in the Heimburg-Jackson model of sound propagation in lipid bilayers are enabled by dispersion of a stiff membrane" by M. Drab et al.

Peets, Tanel; Tamm, Kert; Engelbrecht, Jüri The European physical journal E 2023 / art. 34 <https://doi.org/10.1140/epje/s10189-023-00299-2>

Comparison of several numerical methods in one-dimensional discontinuous elastic wave propagation

Kolman, Radek; **Berezovski, Arkadi**; Gabriel, Dusan; **Tamm, Kert** 28th Nordic Seminar on Computational Mechanics, 22-23 October, Tallinn, 2015 : proceedings of the NSCM28 2015 / p. 89-92 : ill

Continuum mechanics and signals in nerves

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Proceedings of the Estonian Academy of Sciences 2021 / p. 3–18

<https://doi.org/10.3176/proc.2021.1.02> https://doi.org/wp-content/plugins/kirj/pub/proc-1-2021-3-18_20210112191450.pdf [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Criteria for modelling wave phenomena in complex systems : the case of signals in nerves

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Proceedings of the Estonian Academy of Sciences 2019 / p. 276–283 : ill

<https://doi.org/10.3176/proc.2019.3.05> http://www.kirj.ee/public/proceedings_pdf/2019/issue_3/proc-2019-3-276-283.pdf [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Deformation waves in microstructured solids and dimensionless parameters

Engelbrecht, Jüri; Peets, Tanel; Tamm, Kert; Salupere, Andrus Proceedings of the Estonian Academy of Sciences 2013 / p. 109-115 : ill https://artiklid.elnet.ee/record=b2624195*est

Dispersive waves in microstructured solids

Berezovski, Arkadi; Engelbrecht, Jüri; Salupere, Andrus; Tamm, Kert; Peets, Tanel; Berezovski, Mihhail International journal of solids and structures 2013 / p. 1981-1990 : ill

Eesti teadlaste mudel kergitab närviimpulsside kõõgipoolt saladusloori [Võrguväljaanne]

Oldermaa, Jaan-Juhan novaator.err.ee 2021 / fot [Eesti teadlaste mudel kergitab närviimpulsside kõõgipoolt saladusloori](#)

Electromechanical coupling of waves in nerve fibres

Engelbrecht, Jüri; Peets, Tanel; Tamm, Kert Biomechanics and modeling in mechanobiology 2018 / p. 1771–1783 : ill

<https://doi.org/10.1007/s10237-018-1055-2> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Emergence of solitary deformation waves in Mindlin-type microstructured solids

Tamm, Kert; Salupere, Andrus International Conference on Complexity of Nonlinear Waves : October 5-7, 2009 : book of abstracts 2009 / p. 33

Frequency-dependent dissipation in dispersive wool felt [Online resource]

Kartofelev, Dmitri; Tamm, Kert; Peets, Tanel 22nd International Congress on Acoustics ICA 2016 : proceedings 2016 / p. 53

http://ica2016.org.ar/website/wp-content/uploads/ICA2016_Proceedings.pdf

Frequency-dependent dissipation in dispersive wool felt [Online resource]

Kartofelev, Dmitri; Tamm, Kert; Peets, Tanel 22nd International Congress on Acoustics ICA 2016 : [complete proceedings] 2016 / p. 1-10 : ill <http://ica2016.org.ar/website/proceedings/>

Interaction of deformation waves with internal structures in solids

Engelbrecht, Jüri; Berezovski, Arkadi; Peets, Tanel; Tamm, Kert Contributions to the Foundations of Multidisciplinary Research in Mechanics : papers presented during the 24th International Congress of Theoretical and Applied Mechanics ICTAM 2016, Montreal, August 22-26, 2016. Vol. 3 2017 / p. 2236-2237 : ill http://iutam.org/wp-content/uploads/2017/02/ICTAM_Proceedings_Vol_3.pdf

Interaction of solitary deformation waves in microstructured solids

Salupere, Andrus; Tamm, Kert; Engelbrecht, Jüri Book of abstracts the Fifth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena : Computation and Theory : Athens, USA, April 16-19, 2007 2007 / p. 114

Internal variables used for describing the signal propagation in axons

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Continuum mechanics and thermodynamics 2020 / p. 1619-1627

<https://doi.org/10.1007/s00161-020-00868-2> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Mathematics of nerve signals

Peets, Tanel; Tamm, Kert Applied wave mathematics II : selected topics in solids, fluids, and mathematical methods and complexity 2019 / p. 207-238 https://doi.org/10.1007/978-3-030-29951-4_10 https://www.estee.ee/record=b5303400*est

Mechanical waves in myelinated axons

Tamm, Kert; Peets, Tanel; Engelbrecht, Jüri Biomechanics and modeling in mechanobiology 2022 / p. 1285-1297

<https://doi.org/10.1007/s10237-022-01591-4> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modeling of complex signals in nerve fibers

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Medical hypotheses 2018 / p. 90-95 : ill <https://doi.org/10.1016/j.mehy.2018.08.021>

[Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Modelling of complex signals in nerves

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel 2021 <https://doi.org/10.1007/978-3-030-75039-8>

Modelling of processes in nerve fibres at the interface of physiology and mathematics

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Biomechanics and modeling in mechanobiology 2020 / p. 2491-2496

<https://doi.org/10.1007/s10237-020-01350-3> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Negative group velocity in solids

Tamm, Kert; Peets, Tanel; Engelbrecht, Jüri; Kartofelev, Dmitri Wave motion 2017 / p. 127-138 : ill

<https://doi.org/10.1016/j.wavemoti.2016.04.010>

Numerical simulation of interaction of solitary deformation waves in microstructured solids

Salupere, Andrus; Tamm, Kert; Engelbrecht, Jüri International journal of non-linear mechanics 2008 / 3, p. 201-208 : ill

Numerical simulation of mechanical waves in biomembranes

Tamm, Kert; Peets, Tanel 28th Nordic Seminar on Computational Mechanics, 22-23 October, Tallinn, 2015 : proceedings of the NSCM28 2015 / p. 179-182 : ill

Numerical simulation of propagation of solitary deformation waves in microstructured solids

Salupere, Andrus; Engelbrecht, Jüri; Tamm, Kert USNCCM IX : Ninth US National Congress on Computational Mechanics : San Francisco, CA, July 22-26, 2007 [book of abstracts] 2007 / [8] p

Närviimpulss ja matemaatika

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Horisont 2021 / lk. 48-52 : ill https://www.ester.ee/record=b1072243*est

On mathematical modeling of the propagation of a wave ensemble within an individual axon

Peets, Tanel; Tamm, Kert; Engelbrecht, Jüri Frontiers in cellular neuroscience 2023 / art. 1222785

<https://doi.org/10.3389/fncel.2023.1222785>

On mathematical modelling of solitary pulses in cylindrical biomembranes

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Biomechanics and modeling in mechanobiology 2015 / p. 159-167 : ill

<http://dx.doi.org/10.1007/s10237-014-0596-2>

On mechanical aspects of nerve pulse propagation and the Boussinesq paradigm

Peets, Tanel; Tamm, Kert Proceedings of the Estonian Academy of Sciences 2015 / p. 331-337 : ill

https://artiklid.elnet.ee/record=b2740556*est

On mechanisms of electromechanophysiological interactions between the components of signals in axons

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Proceedings of the Estonian Academy of Sciences 2020 / p. 81-96 : ill

<https://doi.org/10.3176/proc.2020.2.03> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

On nonlinear waves in media with complex properties

Engelbrecht, Jüri; Salupere, Andrus; Berezovski, Arkadi; Peets, Tanel; Tamm, Kert Generalized models and non-classical approaches in complex materials ; 1 2018 / p. 275-286 https://doi.org/10.1007/978-3-319-72440-9_13 [Journal metrics at Scopus](#) [Article at Scopus](#)

[at Scopus](#)

On numerical simulation of propagation of solitons in microstructured media

Salupere, Andrus; Ilison, Lauri; Tamm, Kert Applications of Mathematics in Engineering and Economics '34 : proceedings 2008 / p. 155-165

On propagation of 1D solitary waves in Mindlin-type microstructured solids

Tamm, Kert; Salupere, Andrus Book of abstracts : The Sixth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena : Computation and Theory : Athens, Georgia, March 23-26, 2009 2009 / p. 86

<https://www.sciencedirect.com/science/article/pii/S0378475410002260>

On solitary waves in case of amplitude-dependent nonlinearity

Tamm, Kert; Peets, Tanel Chaos, solitons & fractals 2015 / p. 108-114 : ill <http://dx.doi.org/10.1016/j.chaos.2015.01.013>

On solutions of a Boussinesq-type equation with displacement-dependent nonlinearities : the case of biomembranes

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Philosophical magazine 2017 / p. 967-987 : ill

<https://doi.org/10.1080/14786435.2017.1283070>

On solutions of a Boussinesq-type equation with displacement-dependent nonlinearity: A soliton doublet to the memory of Alexander Samsonov

Peets, Tanel; Tamm, Kert; Simson, Päivo; Engelbrecht, Jüri Wave motion 2019 / p. 10-17

<https://doi.org/10.1016/j.wavemoti.2018.11.001> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

On the complexity of signal propagation in nerve fibres

Engelbrecht, Jüri; Peets, Tanel; Tamm, Kert; Laasmaa, Martin; Vendelin, Marko Proceedings of the Estonian Academy of

Sciences 2018 / p. 28-38 : ill <https://doi.org/10.3176/proc.2017.4.28> http://www.ester.ee/record=b2355998*est [Journal metrics at Scopus](#)

[Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

On the influence of internal degrees of freedom on dispersion in microstructured solids

Tamm, Kert; Peets, Tanel Mechanics research communications 2013 / p. 106-111 : ill

On the influence of material properties on the wave propagation in Mindlin-type microstructured solids

Salupere, Andrus; Tamm, Kert Wave motion 2013 / p. 1127-1139 : ill

On the interaction of deformation waves in microstructured solids

Salupere, Andrus; Tamm, Kert; Engelbrecht, Jüri; Peterson, Pearu Proceedings of the Estonian Academy of Sciences. Physics.

Mathematics 2007 / 2, p. 93-99 : ill

On the physical background of nerve pulse propagation : heat and energy

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Journal of non-equilibrium thermodynamics 2021 / p. 343-353 : ill

<https://doi.org/10.1515/jnet-2021-0007> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

On the propagation of 1D solitary waves in Mindlin-type microstructured solids

Tamm, Kert; Salupere, Andrus Mathematics and computers in simulation 2012 / p. 1308-1320 : ill

<https://www.sciencedirect.com/science/article/pii/S0378475410002260>

On the propagation of solitary waves in Mindlin-type microstructured solids

Tamm, Kert; Salupere, Andrus Proceedings of the Estonian Academy of Sciences 2010 / 2, p. 118-125 : ill

On the role of nonlinearities in the Boussinesq-type wave equations

Peets, Tanel; Tamm, Kert; Engelbrecht, Jüri Wave motion 2017 / p. 113-119 : ill <https://doi.org/10.1016/j.wavemoti.2016.04.003>

Physics shapes signals in nerves

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel The European Physical Journal Plus 2022 / art. 696 [https://doi.org/10.1140/epjp/s13360-](https://doi.org/10.1140/epjp/s13360-022-02883-5)

[022-02883-5](https://doi.org/10.1140/epjp/s13360-022-02883-5) [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Propagation of solitary pulses in microstructured solids [Electronic resource]

Salupere, Andrus; Tamm, Kert; Engelbrecht, Jüri 6th European Solid Mechanics Conference ESMC2006 : 28 August - 1

September 2006, Budapest, Hungary : proceedings 2006 / [2] p. [CD-ROM]

Signals in nerves from the philosophical viewpoint

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel Proceedings of the Estonian Academy of Sciences 2022 / p. 369-375 : ill

<https://doi.org/10.3176/proc.2022.4.07> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Signals in nerves from the philosophical viewpoint

Engelbrecht, Jüri; Tamm, Kert; Peets, Tanel PhilSci-Archive 2020 / 13 p <http://philsci-archive.pitt.edu/id/eprint/18135> [http://philsci-](http://philsci-archive.pitt.edu/18135/1/Signals_in_nerves_from_the_philosophical_viewpoint.pdf)

[archive.pitt.edu/18135/1/Signals_in_nerves_from_the_philosophical_viewpoint.pdf](http://philsci-archive.pitt.edu/18135/1/Signals_in_nerves_from_the_philosophical_viewpoint.pdf)

Soliton trains in dispersive media

Engelbrecht, Jüri; Peets, Tanel; Tamm, Kert Low temperature physics Fizika nizkikh temperatur 2018 / p. 887-892

<https://doi.org/10.1063/1.5041436> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Solitons modelled by Boussinesq-type equations

Engelbrecht, Jüri; Peets, Tanel; Tamm, Kert Mechanics research communications 2018 / p. 62-65

<https://doi.org/10.1016/j.mechrescom.2017.05.008> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

Temperature changes accompanying signal propagation in axons

Tamm, Kert; Engelbrecht, Jüri; Peets, Tanel Journal of non-equilibrium thermodynamics 2019 / p. 277-284 : ill

<https://doi.org/10.1515/jnet-2019-0012> [Journal metrics at Scopus](#) [Article at Scopus](#) [Journal metrics at WOS](#) [Article at WOS](#)

28th Nordic Seminar on Computational Mechanics, 22-23 October, Tallinn, 2015 : proceedings of the NSCM28
2015 https://www.ester.ee/record=b4510264*est

Wave propagation and interaction in Mindlin-type microstructured solids: numerical simulation = Lainelevi ja interaktsiooni numbriline modelleerimine Mindlini tüüpi mikrostruktuursetes tahkistes
Tamm, Kert 2011 https://www.ester.ee/record=b2679197*est

Wave propagation in hierarchical multiscale microstructured solids and dispersion

Peets, Tanel; Tamm, Kert 28th Nordic Seminar on Computational Mechanics, 22-23 October, Tallinn, 2015 : proceedings of the NSCM28 2015 / p. 141-144 : ill

Waves in microstructured solids and negative group velocity

Peets, Tanel; Kartofelev, Dmitri; Tamm, Kert; Engelbrecht, Jüri EPL: a letters journal exploring the frontiers of physics 2013 / p. 16001-p1-p6 : ill