Lista de lucrări în domeniul de ştiinţă definit de disciplinele din postul scos la concurs

NUMELE ŞI PRENUMELE: MÁTYÁS LÁSZLÓ

I. LISTA PUBLICAȚIILOR RELEVANTE

L. Mátyás, T. Tél and J. Vollmer, *Thermodynamic cross effects from dynamical systems*, Physical Review E **61**, pp. R3295-R3298.

J. Vollmer, T. Tél, L. Mátyás, *Modeling thermostating, entropy currents and cross effects by dynamical systems*, Journal of Statistical Physics 101 (1-2), 2000, pp.79-105.

L. Mátyás, T. Tél and J. Vollmer, *Coarse grained entropy and information dimension of dynamical systems: The driven Lorentz gas*, Physical Review E **69**, 2004, 016205, pp.1-8.

L. Mátyás, R. Klages, *Irregular diffusion in the bouncing ball billiard*, Physica D **187**, 2004, pp. 165-183.

L. Mátyás and P. Gaspard, *Entropy production in diffusion-reaction systems: The reactive random Lorentz gas*, Physical Review E **71**, 2005, 036147, pp.1-10..

L. Mátyás, I.F. Barna, *Geometrical origin of chaoticity in the bouncing ball billiard*, Chaos, Solitons and Fractals **44**, 2011, pp.1111-1116.

I.F. Barna and L. Mátyás, *Analytic solutions for the three dimensional compressible Navier-Stokes equation*, Fluid Dynamics Research 46, 2014, 055508, pp.1-10.

L. Mátyás and I.F. Barna, *General self-similar solutions of diffusion equation and related constructions*, Romanian Journal of Physics **67**, 2022, 101, pp.1-16.

I.F. Barna, G. Bognár, L. Mátyás, K. Hriczó, *Self-similar analysis of the time dependent compressible and incompressible boundary layers including heat conduction*, Journal of Thermal Analysis and Calorimetry **147**, 2022, pp.13625-13632.

L. Mátyás and I.F. Barna, *Even and odd self-similar solutions of diffusion equation for infinite horiz*on, Universe **9**, 2023, 264, pp.1-16.

II. LISTA COMPLETĂ DE PUBLICAȚII, CREAȚII, INVENȚII

A. Teza de doctorat.
Titlul: Procese de transport din sisteme dinamice,
Conducătorul tezei: Tamás TÉL,

Denumire instituţiei unde s-a realizat: Universitatea Eötvös Loránd.
Calificativul: Doctor în Fizică, summa cum laude.

Tezele lucrării de doctorat:

Am realizat un model al procesului de transfer termic printr-un sistem dinamic. Acest sistem dinamic este un sistem multibaker haotic, în care transportul de energie s-a realizat prin introducerea unui câmp de energie cinetică. Modelul – intr-o limită macroscopică bine definită – este capabil să redea ecuaţia transportului de căldură.

Am reuşit să generalizez modelele de difuzie şi conductivitate electrică completând cu modelul transportului de căldură menţionat, astfel încât în modelul generalizat este valabil relaţia lui Onsager. În limita macroscopică a modelului regăsim coeficienţii Onsager, cunoscute din teoria cinetică sau din termodinamică.

Cu ajutorul unui alt tip de model multibaker am reuşit să modelez procesul de curgere laminară cu interacţiuni între straturi, datorită vâscozităţii. Viteza macroscopică este rezultatul coresunzător al unei viteze microscopice. Limita macroscopică a modelului redă nu numai ecuaţia de bază a hidrodinamicii cu curgere laminară – ecuaţia Navier-Stokes – ci şi încălzirea datorită vâscozităţii.

În modelele descrise mai sus am arătat ireversibilitatea proceselor printr-o metodă de "coarse graining", ceea ce face posibilă determinarea cantitativă a producţiei de entropie ireversibilă. Mai mult, în fiecare model se poate calcula întreaga balantă a entropiei, cu fluxul de entropie şi producţia de entropie ireversibilă, rezultatele fiind în concordanţă cu termodinamica.

În modelele studiate am reuşit să arăt că disiparea şi termostarea au un rol diferit. Disiparea este strâns legat de contracţia volumelor în spaţiul fazelor. Dacă dinamica microscopică este reversibilă, atunci regăsim în limita macroscipică producţia de entropie ireversibilă corectă – coerentă cu termodinamica.

In modelul procesului de transport am studiat fluctuaţiile producţiei de entropie ireversibilă în jurul stărilor staţionare. Am realizat o relaţie de flucuaţie în cazul acelor procese când sistemul este caracterizat de o distribuţie staţionară dar inhomogenă a energiei.

Am aplicat metoda "coarse graining" în cazul gazului Lorentz. Entropia "coarse graining" pentru acest sistem, după un timp, ajunge la o valoare constantă, similar cu entropia termodinamică. Valoarea de saturaţie al acestei entropii este în legătură cu dimeniunea de informaţie a sistemului dinamic.

B. Cărti publicate

B1. Cărţi (manuale, monografii, tratate, îndrumare etc.) publicate la edituri recunoscute în străinătate.

B2. Cărţi (manuale, monografii, tratate, îndrumare etc.) publicate în ţară, la edituri recunoscute CNCSIS/CNCS.

Mátyás László, Elektromosság, mágnesség és optika – laboratóriumi jegyzet (Electricitate, magnetism şi optică – note de laborator), Kolozsvári Egyetemi Kiadó - Presa Universitară Clujeană, Cluj-Napoca, 2018, nr total de pagini 146, ISBN 978-606-37-0411-6 .

Mátyás László, Termodinamika (Termodinamică), Kolozsvári Egyetemi Kiadó - Presa Universitară Clujeană, Cluj-Napoca, 2020, nr total de pagini 172, ISBN 978-606-37-0761-2 .

B3. Cărţi (manuale, monografii, tratate, îndrumare etc.) publicate la alte edituri sau pe plan local.

B4. Cărţi (manuale, monografii, tratate, îndrumare etc.) publicate pe web.

B5. Capitole de cărţi publicate în străinătate

I.F. Barna and L. Mátyás

Understanding the Schrödinger Equation: Some [Non]Linear Perspectives

Editor: Valentino Simpao and Hunter Little

Nova Science Publisher, New York, 2020, nr de pagini totale 300.

Self-similar and Travelling-Wave Analysis of the Madelung Equations Obtained from the Free Schrödinger Equation (capitol) pp. 182 – 223.

ISBN: 978 153 6176629

B6. Capitole de cărţi publicate în ţară

C. Lucrări ştiinţifice publicate

C1. Lucrări ştiinţifice publicate în reviste cotate ISI

1. Steliana Codreanu and László Mátyás, An Analytical Study of Bifurcations Generated by Some Iterated Function Systems, Chaos, Solitons and Fractals Vol.**10** (8), 1999, pp.1343-1348.
2. László Mátyás, Tamás Tél and Jürgen Vollmer, Thermodynamic cross effects from dynamical systems, Physical Review E **61** (4), 2000, pp. R3295-R3298.
3. László Mátyás Tamás Tél and Jürgen Vollmer, Multibaker map for thermodynamic cross effects in dynamical systems, Physical Review E **62** (1), 2000, pp.349-365.
4. Jürgen Vollmer, Tamás Tél and László Mátyás, Modeling Thermostating, Entropy Currents, and Cross Effects by Dynamical Systems, Journal of Statistical Physics Vol. **101**, (1/2), 2000, pp.79-105.
5. Tamás Tél, Jürgen Vollmer and László Mátyás, Shear flow viscous heating and entropy balance from dynamical systems, Europhys. Lett. **53** (4), 2001, pp.458-464; arXiv:nlin/0009013
6. László Mátyás Tamás Tél and Jürgen Vollmer, Multibaker map for shear flow and viscous heating, Physical Review E, Volume **64**, 2001, 056106 pp.1-11.
7. Jürgen Vollmer, László Mátyás and Tamás Tél, Escape-Rate Formalism, Decay to Steady States and Divergences in the Entropy-Production Rate, Journal of Statistical Physics, Vol. **109** (3/4), 2002) pp. 875-893.
8. Tamás Tél, Jürgen Vollmer and László Mátyás, Comments on the paper 'Particles maps, and irreversible thermodynamics' by E.G.D Cohen and L. Rondoni, Physica A 306 (2002) 117, Physica A **323**, 2003, pp.323-326.
9. László Mátyás, T Tél and J Vollmer, Coarse-grained entropy and information dimension of dynamical systems: The driven Lorentz gas, Phys Rev E **69**, 2004, 016205, pp.1-8.
10. László Mátyás and Rainer Klages, Irregular diffusion in the bouncing ball billiard, Physica D **187,** 2004, pp.165-183.

11. Rainer Klages, Imre F. Barna and László Mátyás, Spiral modes in the diffusion of a single granular particle on a vibrating surface, Physics Letters A **333** (2004) 79-84.
12. László Mátyás and Pierre Gaspard, Entropy production in diffusion-reaction systems: The reactive random Lorenz gas, Phys Rev E **71,** 2005, 036147 pp.1-10.

13. László Bencze, Radmila Milačič, Radojko Jaćimović, Dušan Žigon, L.Mátyás, Arkadij Popovič, Knudsen effusion mass spectrometric determination of thermodynamic data of liquid Al-Cu-Sn alloy,International Journal of Mass Spectrometry **289,** 2010, p.11-29
14. László Mátyás and Imre Ferenc Barna, Geometrical origin of chaoticity in the bouncing ball billiard, Chaos, Solitons & Fractals **44**, 2011, pp.1111-1116.
15. IF Barna and L Mátyás, Analytic solutions for the one-dymensional compressible Euler equation with heat conduction closed with different kind of equation of states, Miskolc Mathematical Notes 3, 2013, pp.785-799.
16. Robert Szép and László Mátyás, The role of regional atmospheric stability in high-PM10 concentration episodes in Miercurea Ciuc (Harghita), Carpathian Journal of Earth and Environmental Sciences **9,** (2014) pp. 241-250.
17. IF Barna and L Mátyás, Analytic solutions for the three-dimensional compressible Navier-Stokes equation, Fluid Dynamics Research 46, 2014, 055508, pp.1-10.
18. L Mátyás, E Neagu and A Vajda, Effects of periodic increase of prey population in a predator-prey model, Environmental Engineering and Management Journal **14,** 2015, pp.851-854.
19. I F Barna and L Mátyás, Analytic self-similar solutions of the Oberbeck-Boussinesq equations, Chaos, Solitons &Fractals **78,** 2015, pp.249-255.
20. R Szép , R Keresztes, L Mátyás, M Ghimpusan, Troposhperic Ozone Concenctrations - Seasonal and Daily Analysis and its Association with NO and NO_2 as a Function of NO_X în Ciuc Depression, Romania, Revista de Chimie **67**(2), 2016, pp.205-213.

21. I F Barna, M A Pocsai, S Lökös, L Mátyás, Rayleig-Bénard convection in generalized Oberbeck-Boussinesq system, Chaos, Solitons and Fractals **103**, 2017, pp.336-341.
22. I F Barna, M A Pocsai, L Mátyás, Self-Symilar Analysis of the Nonlinear Schrödinger Equation in the Madelung Form, Advances in Mathematical Physics, Volume 2018, 2018, Article ID 7087295, pp.1-5.
23. András Cs D, Mátyás L, Ráduly B, Salamon R V, Increasing the Prediction Effieciency of Hansen Solubility Parameters in Supercritical Fluids, Periodica Polytechnica Chemical Engineering **63** (2), 2019, pp.286-293.
24. Imre F. Barna, László Mátyás, and Mihály A. Pocsai, Self-similar analysis of a viscous heated Oberbeck-Boussinesq flow system, Fluid Dynamics Research **52**, 2020, 015515, pp.1-11.
25. I. F. Barna, G. Bognár, M. Guedda, K. Hriczó, and L. Mátyás, Analytic self-similar solutions of the Kardar-Parisi-Zhang interface growing equation with various noise term, Mathematical Modelling and Analysis **25**, 2020, pp.241-256.
26. I.F. Barna, L. Mátyás, Analytic solutions of a two-fluid hydrodynamic model, Mathematical Modelling and Analysis **26,** 2021, pp.582-590.
27. László Mátyás, I.F. Barna, General self-similar solutions of diffusion equation and related constructions, Romanian Journal of Physics **67,** 2022, 101, pp.1-16.
28. Mahmoud Saleh, Endre Kovács, Imre Ferenc Barna, and László Mátyás, New analytical results and comparison of 14 numerical schemes for the diffusion equation with space-dependent diffusion coefficient, Mathematics **10**, 2022, 2813, pp.1-28.
29. Imre Ferenc Barna, Mihály András Pocsai, and László Mátyás, Time-dependent analytic solutions for water waves above sea of varying depths, Mathematics **10**, 2022, 2311 pp.1-16.
30. Imre Ferenc Barna and László Mátyás, Advanced self-similar solution of regular and irregular diffusion equations, Mathematics **10**, 2022, 3281 pp.1-17.

31. Imre Ferenc Barna, Gabriella Bognár, László Mátyás and Krisztián Hriczó, Self-similar solutions of time dependent compressible and incompressible boundary layers including heat conduction, Journal of Thermal Analysis and Calorimetry **147,** 2022, pp.13625-13632.

32. László Mátyás and Imre Ferenc Barna, Even and odd self-similar solutions of diffusion equation for infinite horizon, Universe **9**, 2023, 264, pp.1-16.

C2. Lucrări ştiinţifice publicate în reviste indexate în baze de date internaţionale (indicaţi şi baza de date).

C3. Lucrări ştiinţifice publicate în reviste din străinătate (altele decât cele menţionate anterior).

C4. Lucrări ştiinţifice publicate în reviste din ţară, recunoscute CNCSIS/CNCS (altele decât cele din baze de date internaţionale).

Csaba D. András, Éva Molnos, László Mátyás, Alexandru Szép, New Fitting Method for Vapour-Liquid Equilibrium Data and its Application for Ethanol-Water Distillation Process Modeling, Revista de Chimie71(7), 2020, pp. 114-125.

C5. Lucrări ştiinţifice publicate în reviste, altele decât cele menţionate anterior

C6. Lucrări ştiinţifice publicate în volumele manifestărilor ştiinţifice

László Mátyás, Az ásványvízben előforduló buborékképződésről (Despre formarea bulelor în apa minerală), Apele Minerale din Regiunea Carpatică, A V-a Conferinţă Ştiinţifică Internaţională, Editor: Máthé István, Székely Gabriella, Miercurea Ciuc, 2008, 131-134.

László Mátyás, Ozmózis és a víz ásványtartalma (Osmoză şi conţinutul de minerale în apă), Apele Minerale în Regiunea Carpatică, A IX-a Conferinţă Ştiinţifică Internaţională, Editor: Máthé István, Băile Herculane, 2012, 151-154.

D. Traduceri de cărţi, capitole de cărţi, alte lucrări ştiinţifice

E. Editare, coordonare de volume

F. Brevete de invenţii şi alte titluri de proprietate

G. Contracte de cercetare (menţionaţi calitatea de director sau membru)

H. Creaţia artistică

H1 Participări la manifestaţii artistice internaţionale
H2. Participări la manifestaţii artistice naţionale
H3. Expoziţii, filme, spectacole, concerte, discuri de autor, opere internaţionale
H4. Expoziţii, filme, spectacole, concerte, discuri de autor, opere naţionale
H5. Produse cu drept de proprietate intelectuală în domeniul artistic

III. RECUNOAŞTEREA

I. Premii, distincţii.

J. Citări

László Mátyás, Tamás Tél and Jürgen Vollmer, Thermodynamic cross effects from dynamical systems, Physical Review E **61** (4), 2000, pp. R3295-R3298.

1.1. Wójcik, D.K., Quantum maps with space extent: A paradigm for lattice quantum walks, International Journal of Modern Physics B 20 (14), pp. 1969-2017, 2006 (Impact Factor: 0.227).

1.2. Tasaki S., Gaspard P, Entropy production and transport in a conservative multibaker map with energy, J.Stat Phys 101, 125-144, 2000.
1.3. Tsaki S., Irreversibility in reversible multibaker maps – Transport and fractal distributions,Advances in Chemical Physics, 122, pp. 75-107, 2002.
1.4. Ishida H., Symmetry-Based Balance Equation for Local Entropy Density in a Dissipative Multibaker Chain System, Entropy, 15(10), pp. 4345-4375, 2013.
1.5. Ishida H., A law of order estimation and leading-order terms for a family of averaged quantities on a multibaker chain system, Journal of Mathematical Physics **55**, 063303, pp.1-16, 2014.

2. László Mátyás Tamás Tél and Jürgen Vollmer, Multibaker map for thermodynamic cross effects in dynamical systems, Physical Review E **62** (1), 2000, pp.349-365.
   2.1. Tasaki S., Gaspard P., Entropy production and transports in a conservative multibaker map with energy, Journal of Statistical Physics 101, 125-144, 2000.
   2.2. Tasaki S., Irreversibility in reversible multibaker maps – Transport and fractal distributions, Advances in Chemical Physics 122, pp. 75-107, 2002.
   2.3. Wójcik, D.K., Dorfman, J.R., Quantum multibaker maps: Extreme quantum regime, Physical Review E - Statistical, Nonlinear, and Soft Matter Physics 66 (3), art. no. 036110, pp. 036110/1-036110/16, 2002. (I F: 2.326).
   2.4. Wójcik, D.K,.Quantum maps with space extent: A paradigm for lattice quantum walks, International Journal of Modern Physics B 20 (14), pp. 1969-2017, 2006 (I F: 0.227).
   2.5. Ishida H., Symmetry-Based Balance Equation for Local Entropy Density in a Dissipative Multibaker Chain System, Entropy 15(10), 4345-4375, 2013.
   2.6. Ishida H., A law of order estimation and leading-order terms for a family of averaged quantities on a multibaker chain system, Journal of Mathematical Physics, 55(6), 2014.
3. Jürgen Vollmer, Tamás Tél and László Mátyás, Modeling Thermostating, Entropy Currents, and Cross Effects by Dynamical Systems, Journal of Statistical Physics **101**, (1/2), 2000, pp.79-105.
   3.1. Wójcik, D.K., Dorfman, J.R., Quantum multibaker maps: Extreme quantum regime, Physical Review E - Statistical, Nonlinear, and Soft Matter Physics 66 (3), art. no. 036110, pp. 036110/1-036110/16, 2002. (I F: 2.326).
   3.2. Gaspard, P., Nicolis, G., Dorfman, J.R., Diffusive Lorentz gases and multibaker maps are compatible with irreversible thermodynamics, Physica A: Statistical Mechanics and its Applications 323 , pp. 294-322, 2003. (I F: 1.722).
   3.3. Williams, S.R., Searles, D.J., Evans, D.J., Independence of the transient fluctuation theorem to thermostatting details, Physical Review E - Statistical, Nonlinear, and Soft Matter Physics 70 (6 2) , art. no. 066113 , pp. 066113/1-066113/6, 2004. (I F: 2.326).
   3.4. Wójcik, D.K., Quantum maps with space extent: A paradigm for lattice quantum walks, International Journal of Modern Physics B 20 (14), pp. 1969-2017, 2006. (I F: 0.227)
   3.5. Casati, G., Mejía-Monasterio, C.,Prosen, T., Increasing thermoelectric efficiency: A dynamical systems approach, Physical Review Letters 101 (1) , art. no. 016601, pp.1-4, 2008. (I F: 7.728).
   3.6. Casati, G., Wang, L., Prosen, T., A one-dimensional hard-point gas and thermoelectric efficiency, Journal of Statistical Mechanics: Theory and Experiment 2009 (3), art. no. L03004, pp.1-8, 2009. (I F: 2.056).
   3.7. Ishida H, Symmetry – Based Balance Equation for Local Entropy Density in a Dissipative Multibaker Chain System, Entropy (ISSN 1099-4300) 15: (10) pp. 4345-4375, 2013.
   3.8. Ishida H, A law of order estimation and leading order terms for a family of averaged quantities on a multibaker chain system, Journal of Mathematical Physics 55, 063303, pp.1-16, (2014).
   3.9. Benenti G, Casati G, Mejía-Monasterio C, Thermoelectric efficiency in momentum-conserving systems, New Journal of Physics (IOP) 16, 015014, pp.1-14, 2014.

4. Tamás Tél, Jürgen Vollmer and László Mátyás, Shear flow viscous heating and entropy balance from dynamical systems, Europhysics Letters **53** (4), 2001, pp.458-464.
   4.1. Tasaki S., Irreversibility in reversible multibaker maps – Transport and fractal distributions, Advances in Chemical Physics 122, pp. 75-107, 2002.
   4.2. Cohen, E.G.D., Rondoni, L., Particles, maps and irreversible thermodynamics, Physica A: Statistical Mechanics and its Applications 306 , pp. 117-128, 2002.(I F: 1.722)

4.3. Rondoni, L., Cohen, E.G.D, On some derivations of Irreversible Thermodynamics from dynamical systems theory, Physica D: Nonlinear Phenomena 168-169 , pp. 341-355, 2002. (I F: 1.829).
4.4. Gaspard, P., Nicolis, G., Dorfman, J.R., Diffusive Lorentz gases and multibaker maps are compatible with irreversible thermodynamics, Physica A: Statistical Mechanics and its Applications 323 , pp. 294-322, 2003. (I F: 1.722)
4.5. Morris, G.P., Rondoni, L., Change in distribution function from periodic orbits, Physica D: Nonlinear Phenomena 187 (1-4) , pp. 377-382, 2004.(I F:1.829)

5. László Mátyás Tamás Tél and Jürgen Vollmer, Multibaker map for shear flow and viscous heating, Physical Review E **64**, 2001, 056106 pp.1-11.
 5.1. Cohen EDG, Rondoni L., Particles, maps and irreversible thermodynamics, Physica A 306, 117, 2002.
 5.2. Gaspard, P., Nicolis, G., Dorfman, J.R., Diffusive Lorentz gases and multibaker maps are compatible with irreversible thermodynamics, Physica A: Statistical Mechanics and its its Applications 323, pp. 294-322, 2003. (I F 1.722).

6. Jürgen Vollmer, László Mátyás and Tamás Tél, Escape-Rate Formalism, Decay to Steady States and Divergences in the Entropy-Production Rate, Journal of Statistical Physics **109** (3/4), 2002) pp. 875-893.
 6.1. Cybulski, O., Babin, V., Holyst, R., Minimization of the Renyi entropy production in the stationary states of the Brownian process with matched death and birth rates,Physical Review E - Statistical, Nonlinear, and Soft Matter Physics 69 (1 2) , art. no. 016110 , pp. 161101-1611010, 2004. (I F: 2.326).
 6.2. Cybulski, O., Matysiak, D., Babin, V.,Holyst, R., Pattern formation in nonextensive thermodynamics: Selection criterion based on the Renyi entropy production, Journal of Chemical Physics 122 (17) , art. no. 174105 , pp. 1-8, 2005. (I.F: 3.122).

7. Tamás Tél, Jürgen Vollmer and László Mátyás, Comments on the paper 'Particles maps, and irreversible thermodynamics' by E.G.D Cohen and L. Rondoni, Physica A **306**, 2002 117, Physica A **323**, 2003, pp.323-326.
 7.1. Gaspard P., Nicolis G., Dorfman J.R., Diffusive Lorentz gases and multibaker maps are compatible with irreversible thermodynamics, Physica A, 323, pp. 294-322, 2003.
 7.2. Wójcik, D.K., Quantum maps with space extent: A paradigm for lattice quantum walks, International Journal of Modern Physics B 20 (14) , pp. 1969-2017, 2006. (I F: 0.227).
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8. László Mátyás, Tamás Tél and Jürgen Vollmer, Coarse-grained entropy and information dimension of dynamical systems: The driven Lorentz gas, Physical Review E **69**, 2004, 016205, pp.1-8.
 8.1. Wójcik, D.K., Quantum maps with space extent: A paradigm for lattice quantum walks, International Journal of Modern Physics B 20 (14) , pp. 1969-2017, 2006. (I F: 0.227).
 8.2. Kim S., Computability of entropy and information in classical Hamiltonian systems, Physics Letters A 373, 1409-1414, 2009.

9. László Mátyás and Rainer Klages, Irregular diffusion in the bouncing ball billiard, Physica D **187,** 2004, pp.165-183.
 9.1. Koza, Z., Fractal dimension of transport coefficients in a deterministic dynamical system, Journal of Physics A: Mathematical and General 37 (45) , pp. 10859-10877, 2004. (I F: 0.879).
 9.2. lbeverio, S., Galperin, G., Nizhnik, I.L.,Nizhnik, L.P., Generalized billiards inside an infinite strip with periodic laws of reflection along the strip's boundaries, Regular and Chaotic Dynamics 10 (3) , pp. 285-306, 2005. (I F: 0.925).
 9.3. Górski, A.Z., Srokowski, T., Chaotic and regular motion in dissipative gravitational billiards, Acta Physica Polonica B 37 (9) , pp. 2561-2569, 2006. (I F: 0.998).
 9.4. De Wijn, A.S., Kantz, H., Erratum: Vertical chaos and horizontal diffusion in the bouncing-ball billiard (Physical Review e (2007) 75 (046214)), Physical Review E - Statistical, Nonlinear, and Soft Matter Physics 76 (3) , art. no. 039905, 2007. (I F: 2.326).
 9.5. De Wijn, A.S., Fasolino A. Relating chaos to deterministic diffusion of a molecule adsorbed on a surface, Journal of Physics Condensed Matter21 (26) , art. no. 264002, 2009 (I F: 0.838).

9.6. Capozza R, Vanossi A, Vezzani A, Zaperi, Triggering Fricitonal Slip by Mechanical Vibrations, Tribology Letters 48, pp.95-102, 2012.
9.7. A.K. Behera, A.N. Sekar Iyengar, P.K. Panigrahi, Non-stationary dynamics in the bouncing ball: wavelet perspective, Chaos 24, 043107, 2014.
9.8. T. Kroetz, ALP. Livorati, ED Leonel, IL Caldas, Global ballistic acceleration in a bouncing-ball model, Physical Review E 92, 012905, 2015.
9.9. ALP Livorati, IL Caldas, CP Dettmann, ED Leonel, Crises in a dissipative bouncing ball model, Physics Letters A 379 (43-44), pp.2830-2838, 2015.
9.10. BG. BcBennett, D.M.Harris, Horizontal stability of a bouncing ball, Chaos 26, 093105, 2016.
9.11. Halev, A., Harris DM., Bouncing ball on a vibrating periodic surface, CHAOS 28, 096103, pp. 096103-1 - 096103-5, 2018.
9.12. ALP. Livorati, T. Kroetz, CP. Dettmann, I.L. Caldas, E.D. Leonel, Transition from normal to ballistic diffusion in a one-dymensional impact system, Physical Review E 97, 032205, 2018.
9.13. F.AO. Silveira, S.G. Alves, E.D. Leonel, and D.G. Ladeira, Dynamical Aspects of a bouncing ball in a nonhomogeneous field, Physical Review E 103, 062205, 2021.
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K. Alte realizări semnificative.

Data,
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Semnătura,
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