

Senada Kalabušić CV

OSNOVNE INFORMACIJE

Lične informacije

Ime i prezime: Senada Kalabušić

Adresa: Univerzitet u Sarajevu, Prirodno-matematički fakultet, Odsjek za matematiku, Zmaja od Bosne 33-35, 71000 Sarajevo, Bosna i Hercegovina

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Broj kabineta: 439/IV

Obrazovanje

Doktor matematičkih – 2003. godine, Univerzitet u Sarajevu-PMF

Magistar matematičkih nauka – 2000. godine, Univerzitet u Sarajevu-PMF

Diplomirani matematičar – 1996. godine na Univerzitet u Sarajevu-PMF

Zaposlenje

Redovni profesor od 2011. godine, Univerzitet u Sarajevu-PMF

Vanredni profesor od 2007. do 2011. godine, Univerzitet u Sarajevu-PMF

Docent od 2003. do 2007. godine, Univerzitet u Sarajevu-PMF

Viši asistent od 2000. do 2003. godine, Univerzitet u Sarajevu-PMF

Asistent od 1997. do 2000. godine, Univerzitet u Sarajevu-PMF

NASTAVNIČKE KVALIFIKACIJE

Nastavnik/asistent na predmetima/kursevima

Doktorski predmeti/kursevi: Topološki dinamički sistemi, Nprekidni dinamički sistemi, Dinamički sistemi, Monotoni dinamički sistemi, Statistika i dizajn eksperimenta (Farmaceutski fakultet Univerziteta u Sarajevu), Politehnika III ciklus-Univerzitet „Džemal Bijedić“ u Mostaru
Magistarski predmeti/kursevi: Diskretni dinamički sistemi i diferentne jednađbe, Parcijalne diferencijalne jednađbe, Nelinearna funkcionalna analiza, Sistemi i modeli u ekologiji, Konveksna analiza.

Osnovni predmeti/kursevi: Diferencijalne jednađbe, Parcijalne diferencijalne jednađbe, Dinamički sistemi(izborni), Uvod u funkcionalnu analizu.

ISTRAŽIVAČKI RAD

Istraživački interes

Lokalno i globalno ponašanje rješenja nelinearnih diferentnih jednađbi. Teorija bifurkacija za diskretne dinamičke sisteme i diferentne jednađbe. Monotoni diskretni dinamički sistemi. Normalne forme. Analiza ponašanja matematičkih modela u populacionoj biologiji/matematička biologija

Ekspertiza

recenzent za sljedeće mat./komp. žurnale i AMS.

Slijede neki od žurnala: Nonlinear Dynamics, Journal of Difference Equations and Applications, Advances in Difference Equations, Discrete Dynamics in Nature and Society, Mathematical Methods in Applied Sciences, Ecological Modelling, Discrete and Continuous Dynamical Systems-series B, Filomat...

Od 2005. godine pregledni prikazi radova za AMS.

Post-doc, istraživački boravci, pozvani predavač, učešće na konferencijama i kongresima

Istraživački boravak:

- ISI, Course on Selected Topics in Dynamical systems, Torino, May 19-June 30, 1997.
- Department of Mathematics, University of Rhode Island, USA, April 30-June 30, 2002.
- Fulbright Visiting Scholar, 2008-2009, Department of Mathematics, University of Rhode Island, USA (6 mjeseci)

Predavanja na internacionalnim konferencijama/internationalnim školama:

- Bosnian-Croatian Analysis Meeting, Bihać, May 10-12,2001 Bosnia&Herzegovina.
- International Congress Masee'2003, September 15-21,2003, Borovets, Bulgaria.
- International Conference on Difference Equations, Special Functions and Applications Munich , 25- 30 July, 2005.
- European Advanced Studies, Progress on Difference Equations, Homburg/Saar, Germany, 6-10 March 2006.
- European Conference on Iteration Theory ECIT 2006., September 10-16, Gargnano Italy.
- Progress on Difference Equations 2007. Laufen/Salzach, Germany, March 31 -April 5 2007.
- 14 th International Conference on Difference Equations and Applications, July 21-25, 2008 Istanbul.
- DAAD, Center of Excellence for Applications of Mathematics; Intensive course : Discrete Dynamical Systems and Difference Equations (sa Prof. Dr. Ulrich Krause, Department of Mathematics, University of Bremen, 15-22 juna, 2008.
- Middletown Sectional Meeting of AMS (American Mathematical Society), October 11, 2008.
- AMS, Washington, January, 2009, Non-hyperbolic Dynamics for Competitive Systems in the Plane and Global Period-doubling Bifurcations (Speaker:Prof.Kulenović).
- DAAD Summer school of applied mathematics, Mechanical faculty University of Sarajevo, Systems of difference equations with applications, 2011.
- DAAD summer school of applied mathematics, Faculty of Science Unievrsity of Sarajevo – Difference Equations with applications 2012.
- 18th International Conference on Difference Equations and Applications, 22-27 July 2012, Barcelona, Spain.
- Seventh Bosnian-Hercegovinian Mathematical Conference (The conference was in honor of Professor Mustafa Kulenović on the occasion of his 60th birthday), august 16, 2012.
- Progress on Difference Equations (PODE2014), Izmir Turkey, 2014.
- 23 rd International Conference on Difference Equations, Timisoara, Romania 2017.
- 24th International Conference on Difference Equations and Applications, Dresden, 21-25 May 2018.

Predsjedavajuća organizacionog odbora sljedećih internacionalnih konferencija:

- MICOM2012
- BMS2018 www.pmf.unsa.ba/bms2018
- ICDEA2021 (International Conference on Difference Equations and Applications icdea2021.pmf.unsa.ba), 26-30. jula, 2021.godina, Bosnia and Herzegovina

Istraživački projekti

Međunarodni

Erasmus + Koordinator ispred Univerziteta u Sarajevu projekta „Enhancement of HE research potential contributing further growth of the WB region”- Grant Holder University of Niš (Project Coordinator) 2015-2018.

Domaći

Federalni projekat

- „Invarijante mnogostrukosti i globalna dinamika određenih frakcionalnih diferentnih jednažbi drugog reda sa kvadratnim članovima“ (Invariant manifolds and global dynamics of certain fractional difference equations with quadratic terms“, scientific project financed by Federal Ministry of Science and Education), Federalno ministarstvo obrazovanja i nauke, 2015.godine.
- „Globalna dinamika, bifurkacije i Julia skupovi za neke racionalne diferentne 7 jednažbe sa kvadratnim članovima“ (Global dynamics, bifurcations and Julia sets for some rational difference equations with quadratic terms“, scientific project financed by Federal Ministry of Science and Education“), Federalno ministarstvo obrazovanja.

Kantonalni projekat

- „Diferentne jednažbe s periodičkim koeficijentima i primjene“ („Difference equations with periodic coefficients“, scientific project financed by Ministry of Science and Education of Sarajevo Canton), Kantonalno ministarstvo Obrazovanja, Sarajevo, 2005/2006.
- „Diferentne jednažbe i monotoni diskretni dinamički sistemi“ („Difference equations and discrete dynamical systems“, scientific project financed by Ministry of Science and Education of Sarajevo Canton), Kantonalno ministarstvo Obrazovanja, Sarajevo, Br. 11-14-19768.1/07.
- „Neimark-Sackerova bifurkacija i stabilnost određene klase host-parazitoid modela sa host refugeefektom“ („Neimark-Sacker bifurcation of certain class of host-parasitoid model with host refuge effect“, scientific project financed by Ministry of Science and Education of Sarajevo Canton) Kantonalno ministarstvo za obrazovanje, nauku i mlade, 2019. Broj 11/05-14-27665-1/19.

Superviziranje/mentorisanje doktoranada

Esmir Pilav- odbranjen doktorat 2011.godine

Midhat Mehuljić- odbranjen doktorat 2015.godine

Emin Bešo (zajedničko mentorstvo sa prof. E. Pilav)- odbranjen doktorat 2020.godine

Džana Drino(zajedničko mentorstvo sa prof. E. Pilav)- u toku

Superviziranje/mentorisanje magistranata

Nađa Šečerović - odbranjen 2008.godine

Esmir Pilav - odbranjen 2009.godine

Midhat Mehuljić - odbranjen 2010.godine

Dzeneta Porović - odbranjen 2011.godine

Emina Paljevac - odbranjen 2011.godine

Mirzeta Sofić – odbranjen 2011. godine

Miranda Šabić - odbranjen 2011.godine

Jasmin Bektešević - odbranjen 2012.godine

Aminah Rifai - odbranjen 2012.godine

Feđa Šolak – odbranjen 2012.godine

Amra Gusinjac - odbranjen 2018. godine

Lista svih/odabranih publikacija u naučnim časopisima

1. Kalabušić, S., Kulenović, M.R.S.: Asymptotic Behavior of Certain Third Order Rational Difference Equation. Radovi Matematički **11**, 70-101 (2002).
2. Kalabušić, S., Kulenović, M.R.S., Overdeep, C.B.: On the Asymptotic of the Rational Difference Equation of Third Order. J.Concrete Appl. Math. **1**, 149-162 (2003).
3. Kalabušić, S., Kulenović, M.R.S.: On the Recursive Sequence $x_{n+1} = \frac{\gamma x_{n-1} + \delta x_{n-2}}{C x_{n-1} + D x_{n-2}}$. J. Differ. Equations Appl. **9**, 701-720 (2003).

4. Kalabušić, S., Vajzović, F.: Exponential Formula for One-time Integrated Semigroup. Novi Sad J. Math. **33** (2) (2003).
5. Kalabušić, S., Kulenović, M.R.S.: Rate of Convergence of Solutions of Rational Difference Equations of Second Order. *Advanced in Difference Equations* **2004:2**, 121-139 (2004).
6. Kalabušić, S., Kulenović, M.R.S., Overdeep, C.B.: On the Dynamics of Equation $x_{n+1} = \frac{\gamma x_{n-i} + \delta x_{n-k}}{C x_{n-i} + D x_{n-i}}$. *J. Differ. Equations Appl.* **10**, 915-928 (2004).
7. Kalabušić, S., Nurkanović, M.: On the Dynamics of With a Periodic Coefficient, *Communication on Applied Nonlinear Analysis*. **13**(2), 37-57 (2006).
8. Gibbons, C.H., Kalabušić, S., Overdeep, C.B.: The dichotomy character of Proceedings of the International conference on Difference Equations. 480-496 (2007).
9. Burgić, Dž., Kalabušić, S., Kulenović, M.R.S.: Non-hyperbolic Dynamics for Competitive Systems in the Plane and Global Period-doubling Bifurcations. *Advn. Dynamical Syst. And Appl.* **3** (2008).
10. Burgić, Dž., Kalabušić, S., Kulenović, M. R. S.: Period-two trichotomies of a difference equation of order higher than two. *Sarajevo J. Math.* **4**(16), 73-90 (2008).
11. Burgić, Dž., Kalabušić, S., Kulenović, M. R. S.: Global attractivity results for mixed-monotone mappings in partially ordered complete metric spaces. *Fixed Point Theory Appl.* Art. ID 762478 (2009).
12. Brett, A., Kalabušić, S., Kulenović, M. R. S.: Global Attractivity Results in Partially Ordered Complete Metric Spaces, *Nonlinear Studies*. **18**(2), 141-154 (2011).
13. Kalabušić, S., Kulenović, M.R.S.: Dynamics of Certain Anti-competitive Systems of Rational Difference Equations in the Plane. *Journal of Difference Equations and Applications* (2011) DOI: 10.1080/10236191003730506.
14. Kalabušić, S., Kulenović, M.R.S., Pilav, E.: Global Dynamics of a Competitive System of Rational Difference Equations in the Plane. *Advances in Difference Equations* **2009**, Article ID 132802, 30 pages (2010) doi: 10.1155/2009/132802.
15. Kalabušić, S., Kulenović, M.R.S., Pilav, E.: Dynamics of a Two-dimensional System of Rational Difference Equations of Leslie-Gower type. *Advances in Difference Equations* **2011**, 2011:29 (2011) doi:10.1186/1687-1847-2011-29 .
16. Kalabušić, S., Kulenović, M.R.S., Pilav, E.: Multiple Attractors for a Competitive System of Rational Difference Equations in the Plane. *Abstract and Applied Analysis* **2011** (2011).
17. Gibbons, C.H., Kalabušić, S., Overdeep, C.B.: More results on the trichotomy character of a second-order rational difference equation with period-two coefficients. *Journal of Difference equations and applications*. (2012) DOI:10.1080/10236198.2012.704916.
18. Kalabušić, S., Kulenović, M.R.S., Pilav, E.: Global Dynamics of an Anti-Competitive System of Rational Difference Equations in the Plane. *Journal of Difference equations and applications* (2013).
19. Kalabušić, S., Kulenović, M. R. S., Pilav, E.: Global Dynamics of Anti- Competitive Systems in the Plane. *Dynamics of Continuous, Discrete and Impulsive System* (2013).
20. Kalabušić, S., Kulenović, M.R.S., Mehuljić, M.: Global Period-doubling Bifurcation of Quadratic Fractional Second Order Difference Equation. *Discrete Dyn. Nat. Soc.* **2014** (2014).
21. Kalabušić, S., Kulenović, M. R. S., Pilav, E.: Basins of Attraction of Certain Linear Fractional System of Difference Equations in the Plane. *International Journal of Difference Equations* (2014).
22. Kalabušić, S., Kulenović, M.R.S., Mehuljić, M.: Global Dynamics and Bifurcations of Two quadratic Fractional Difference Equations. *J.Comp.Anal.Appl.* **20**, 12 pp (2016).
23. Bektešević, J., Hadžiabdić, V., Kalabušić, S., Mehuljić, M.: Global Asymptotic Behavior of Some Quadratic Rational Second Order Difference Equations. *International Journal of Difference Equations*, ISSN 0973-6069, 1-16 (2017).
24. Kalabušić, S., Nurkanović, M., Nurkanović, Z.: Global Dynamics of Certain Mix-monotone Difference Equations, *Mathematics. Special Issue "Advances in Differential and Difference Equations with Applications"* (2018).

25. Kalabušić, S., Mujić, N., Pilav, E.: The Invariant Curve in a Planar System of Difference Equations. *Advances in Dynamical Systems and Applications* (2018).
26. Bešo, E., Mujić, N., Kalabušić, S., Pilav, E.: Basin of attraction of the fixed point and period-two solutions of a certain anti-competitive map. *Journal of Computational Analysis and Applications*, **28**(1), 24-34 (2020).
27. Bešo, E., Kalabušić, S., Mujić, N., Pilav, E.: Neimark-Sacker bifurcation and stability of a certain class of a host-parasitoid models with a host refuge effect. *International Journal of Bifurcation and Chaos*, **29**(12), (2019) DOI: 10.1142/S0218127419501694.
28. Kalabušić, S., Bešo, E., Mujić, N., Pilav, E.: Stability analysis of a certain class of difference equations by using KAM theory. *Adv Differ Equ* **2019**(209) (2019) doi:10.1186/s13662-019-2148-7.
29. Bešo, E., Kalabušić, S., Mujić, N., Pilav, E.: Stability of a certain class of a host-parasitoid models with a spatial refuge effect. *Journal of Biological Dynamics* **14**(1), 1-31(2020) DOI: [10.1080/17513758.2019.1692916](https://doi.org/10.1080/17513758.2019.1692916)
30. Bešo, E., Kalabušić, S., Mujić, N., Pilav, E.: Boundedness of solutions and stability of certain second-order difference equation with quadratic term. *Advances in Difference Equations* **19** (2020). <https://doi.org/10.1186/s13662-019-2490-9>.
31. Kalabušić, S., Drino, Dž., Pilav, E.: Global behavior and bifurcation in a class of host-parasitoid models with a constant host refuge. *Qualitative Theory of Dynamical Systems* **19**, Article number: 66 (2020).
32. Kalabušić, S., Drino, Dž., Pilav, E.: Period-doubling and Neimark-Sacker bifurcations of a Beddington host-parasitoid model with a host refuge effect. *International Journal of Bifurcation and Chaos* **30**(16) (2020). <https://doi.org/10.1142/S0218127420502545>
33. Bektešević, J., Hadžiabdić, V., Mehuljić, M., Kalabušić, S., Pilav, E.: Dynamics of a class of host-parasitoid models with external stocking upon parasitoids. *Advances in Difference Equations* **2021:31** (2021) <https://doi.org/10.1186/s13662-020-03193-9>
34. Kalabušić, S., Kulenović, M.R.S., Mehuljić, M.: Global Dynamics of Monotone Second Order Difference Equation. *Journal of Computational Analysis and Applications* **29**(1), 172-184 (2021).
35. Kalabušić, S., Pilav, E.: Stability of the May's host-parasitoid model with variable stocking upon parasitoids. *International Journal of Biomathematics* (2021). (accepted)

Stručne publikacije

1. Kalabušić, S., Pilav, E.: Bifurkacije i haos u nekim ekonomskim modelima. Zbornik radova Ekonomskog fakulteta u Sarajevu (2009).
2. Kalabušić, S., Malenica, M.: Uvod u gama funkciju. Zbornik radova PMF-a u Tuzli (2007).
3. Kalabušić, S.: Neke primjene diferentnih jednačbi u ekonomiji. Zbornik Radova Ekonomskog fakulteta **24**, 233-243 (2004).
4. Arslanagić, Š., Kalabušić, S.: O jednoj Ojlerovoj teoremi iz geometrije i nekim njenim posljedicama. *Triangle* **3**(1), 10-14 (1999).
5. Arslanagić, Š., Kalabušić, S.: 40. Međunarodna matematička olimpijada. *Triangle* **3**(3), 210-221 (1999).

Objavljene knjige i udžbenici

- Kalabušić, S., Ljubović, Č.: Matematika za brucše. Šumarski fakultet, Univerzitet u Sarajevu (2007).
- Kalabušić, S., Malenica, M.: Specijalne funkcije. Teorija i zadaci. Prirodno-matematički fakultet, Univerzitet u Sarajevu (2010).
- Kalabušić, S., Piric, S.: Linearne integralne jednačbe. Prirodno-matematički fakultet, Univerzitet u Sarajevu (2011).
- Kalabušić, S., Pilav, E.: Obične diferencijalne jednačbe. Prirodno-matematički fakultet, Univerzitet u Sarajevu (2014)

Kalabušić, S., Memić, N., Pilav, E.: Parcijalne diferencijalne jednačbe. Prirodno-matematički fakultet Univerzitet u Sarajevu (2015).

NAGRADE I PRIZNANJA

Nagrada Univerziteta u Sarajevu u skladu sa Pravilnikom o nagrađivanju na osnovu rezultata naučnog rada za 2018.godinu.

Program sufinansiranja nauke za 2019. godinu (Naučni radovi u WOSCC, Ministarstvo za obrazovanje, nauku i mlade KS).

Nagrada Univerziteta u Sarajevu u skladu sa Pravilnikom o nagrađivanju na osnovu rezultata naučnog rada za 2019.godinu.

OSTALE KVALIFIKACIJE

Team leader bh.ekipe na 45. Internacionalnoj matematičkoj olimpijadi održanoj u Grčkoj 2004.

Šef Odsjeka za matematiku 2010-2011.

Prodekan za opće poslove i finansije 2011-2016.

Team leader bh.ekipe na 54. Internacionalnoj matematičkoj olimpijadi održanoj u Kolumbiji 2013.godine

Voditelj III ciklusa na Odsjeku za matematiku od 2013-2019.

Šef Katedre za Primijenjenu matematiku od 2014.godine

Član Internacionalnog udruženja za diferentne jednačbe(ISDEDS) od 2004.godine

Predsjednik Udruženja matematičara Kantona Sarajevo od 2016.godine.