

PERSONAL INFORMATION

Amir Mafi

 Department of Mathematics, Kurdistan University, Sanandaj, Iran.

 +98 912 6835967

 a_mafi@ipm.ir or a.mafi@uok.ac.ir

Gender male | Date of birth 29/08/1974 | Nationality Iranian

STUDIES INTERSED

Interests: Local Cohomology Modules, Associated Primes and Attached primes of Local Cohomology Modules and Generalized Local Cohomology Modules, Graded local cohomology modules, graded modules, Weakly Laskerian modules, Stanley-Reisner rings, Rees rings, Filter Regular sequence, Generalized Cohen-Macaulay Modules, Gorenstein injective and Projective modules, Flat Cover, Homological dimension, Ratliff-Rush ideal, Edge ideal, Monomial ideal, Polymatroidal ideal and depth function.

EDUCATION

(Sep. 2000 - Feb. 2005)

Ph.D. in Commutative Algebra

Kharazmi University, Tehran, Iran.

Thesis' topic: "Results on cofiniteness and associated primes of local cohomology Modules",
Supervisor: **Professor H. Zakeri.**

(Sep. 1998- Sep. 2000)

M.Sc. in Commutative Algebra

Kharazmi University, Tehran, Iran.

Projects' Title: "On annihilators and associated primes of local cohomology modules",
Supervisor: **Professor H. Zakeri.**

(Sep. 1994 – Sep. 1998)

B.Sc. in Mathematics

University of Hormozgan, Iran.

PROFESIONAL EXPERIENCES

(Dec. 2021-)

Professor

Mathematics Department

Kurdistan University, Sanandaj, Iran.

(Dec. 2011– Dec. 2021)

Associate Professor

Mathematics Department

Kurdistan University, Sanandaj, Iran.

(Dec. 2008-Dec. 2011)

Assistant Professor

Mathematics Department

Kurdistan University, Sanandaj, Iran.

INTERNATIONAL COLLABORATORS

(Feb.2024-April.2024)	Universitat Politècnica de Catalunya, Barcelona, Spain Departament de Matemàtiques Prof. J. Alvarez Montaner
(Aug. 2022-Sep.2022)	University of Bergen, Prof. G. Floystad
(Jan. 2017-Feb. 2017)	Genova University, Prof. M.E. Rossi
(Jul. 2016-Sep.2016)	Duisburg-Essen University, Germany Mathematics Department Prof. Jurgen Herzog.
(Jul. 2015 –Feb. 2016)	Osnabruck University, Germany Mathematics and Informatic Department Prof. Winfried Bruns.
(March 2014)	IIT University, Mumbi, India Mathematics Department Prof. Tony J. Puthenpurakal.

TEACHING ACTIVITIES

(Sep. 2008 – Present)	Kurdistan University, Sanandaj, Iran ▪ Algebra I, II, III ▪ Linear Algebra ▪ Number theory ▪ Engineering Mathematics ▪ Differential Equations ▪ Advanced Algebra ▪ Commutative Algebra I,II,III ▪ Combinatorial Algebra ▪ Homological Algebra ▪ Discrete Mathematics ▪ Special topics in commutative algebra ▪ Fundamental Mathematics ▪ Graded ring and modules Theory ▪ Combinatorial commutative algebra
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PUBLICATIONS

Journals

1. K. Divaani-Aazar and A. Mafi, A new characterizations of commutative Artinian Rings, Vietnam J. Math., 23 (2004), 319-322.
2. K. Divaani-Aazar and A. Mafi, Associated primes of local cohomology modules, Proc. AMS., 133 (2005), 655-660.
3. K. Divaani-Aazar and A. Mafi, Associated primes of local cohomology modules of weakly Laskerian modules, Comm. Alg., 34 (2006), 681-690.

4. A. Mafi, Some results on the local cohomology modules, Arch. Math. (Basel), 87 (2006), 211-216.
5. A. Mafi, On the associated primes of generalized local cohomology modules, Comm. Alg. 34 (2006), 2489-2494.
6. A. Mafi, Some properties of Generalized local cohomology modules, Acta Mathematica Vietnam., 31 (2006), 99-102.
7. K. Divaani-Aazar and A. Mafi, Hopfian and Co-Hopfian Modules Over Commutative Rings, Vietnam J. Math., 35 (2007), 275-284.
8. A. Mafi and H. Zakeri, A note on local cohomology, Algebra Colloq., 15 (2008), 97-100.
9. A. Mafi and H. Saremi, Generalized regular sequences and finiteness of local cohomology modules, Algebra Colloq., 15 (2008), 457-462.
10. A. Mafi, Some homological properties of Artinian modules, Vietnam J. Math., 36 (2008), 173-181.
11. A. Mafi and H. Saremi, On the cofiniteness properties of certain general local cohomology modules, Acta Sci. Math.(Szeged), 74 (2008), 501-507.
12. A. Mafi, On the finiteness results of the generalized local cohomology modules, Algebra Colloq., 16 (2009), 325-332.
13. A. Mafi, A generalization of the finiteness problem in local cohomology modules, Proc. Indian. Acad. Sci. Math. Sci., 119 (2009), 159-164.
14. A. Mafi, Associated primes of the top local homology modules with respect to maximal ideal, Southeast Asian Bulletin of Mathematics, 33 (2009), 885-889.
15. A. Mafi and H. Saremi, Cofinite modules and generalized local cohomology, Houston J. Math., 35 (2009), 1013-1018.
16. A. Mafi, Gorenstein homological dimension and Ext-depth of modules, Bull . Belq. Math . Soc. Simon Stevin., 16 (2009), 557-564.
17. A. Mafi, Some criteria for the Cohen-Macaulay property and local cohomology, Acta Mathematica Sinica (English Series), 25 (2009), 917-922.
18. A. Mafi, Matlis reflexive and generalized local cohomology modules, Czech. Math. J., 59 (2009), 1095-1102.
19. A. Mafi and H. Saremi, A note on the finiteness property related to derived functors, Acta Mathematica Vietnam, 34 (2009), 371-374.
20. A. Mafi and H. Saremi, On the finiteness of local homology modules, Rendiconti del Seminario Matematico, 67 (2009), 117-122.
21. A. Mafi, Finiteness of local cohomology modules over rings of small dimension, Houston J. Math., 37 (2011), 361-368.
22. A. Mafi, Co-Cohen-Macaulay modules and generalized local cohomology, Algebra Colloq., 18 (2011), 807-813.

23. A. Mafi, Local cohomology and sequentially Cohen-Macaulay modules, *Algebra Colloq.*, 18 (2011), 815-818.
24. A. Mafi and H. Saremi, Coassociated primes of local homology and local cohomology Modules, *Rocky Mountain Journal of Mathematics*, 41 (2011), 1631-1638.
25. A. Mafi, Top generalized local cohomology modules, *Turkish J. Math.*, 35 (2011), 611-615.
26. A. Mafi, On the local cohomology of minimax modules, *Bull. Korean Math. Soc.*, 48 (2011), 1125-1128.
27. A. Mafi, On Minimax and graded local cohomology modules, *Southeast Asian Bulletin of Mathematics*, 35 (2011), 805-812.
28. A. Mafi and H. Saremi, Artinianness of certain graded local cohomology modules, *Canad. Math. Bull.*, 55 (2012), 153-156.
29. A. Mafi, On the annihilation of local homology modules, *Bull. Math. Soc. Sci. Math. Roumanie*, 103 (2012), 63-67.
30. H. Saremi and A. Mafi, Some results of sequentially Cohen-Macaulay modules, *Chiang Mai J. Sci.*, 39 (2012), 498-501.
31. A. Mafi, Cofiniteness of composed local cohomology modules, *Forum Math.*, 25 (2013), 173-178.
32. A. Mafi, Results of formal local cohomology modules, *Bull. Malaysian Math. Soc.*, 36 (2013), 173-177.
33. A. Mafi and H. Saremi, Finiteness of graded generalized local cohomology modules, *Mathematical Notes*, 94 (2013), 642-643.
34. H. Saremi and A. Mafi, Finiteness dimension and Bass numbers of generalized local cohomology modules, *Journal of Algebra and Its Applications*, 12 (2013), 1350036-6
35. A. Mafi and H. Saremi, Co-Cohen-Macaulay modules and local cohomology, *Journal of Mathematics*, 2013 (2013), 1-3.
36. H. Saremi and A. Mafi, On the finiteness dimension of local cohomology modules, *Algebra Colloq.*, 21 (2014), 517-520.
37. A. Mafi, Local cohomology and sequentially generalized Cohen-Macaulay, *Chiang Mai J. sci.*, 41(2014), 1444-1448.
38. A. Mafi and A. P. E. Talemi, A results of certain local cohomology modules, *Bull. Korean Math. Soc.*, 51 (2014), 653-657.
39. A. Mafi and S. Tabejamaat, Results of almost Cohen-Macaulay modules, *J. Algebraic systems*, 3 (2016), 147-150.
40. A. Mafi and D. Naderi, A note on reduction numbers and Hilbert-Samuel functions of ideals over Cohen-Macaulay rings, *Turkish J. Math.*, 40 (2016), 766-769.
41. H. Saremi and A. Mafi, Results on Hilbert coefficients of a Cohen-Macaulay modules, *J. Algebra and related topics.*, 4 (2016), 33-37.
42. S. Tabejamaat and A. Mafi, About a Serre-type condition for modules, *Journal of Algebra and Its Applications*, 16 (2017), (6 page)
43. S. Tabejamaat, A. Mafi and Kh. Ahmadi Amoli, Property of almost Cohen-Macaulay over extension modules, *Algebra Colloq.*, 24 (2017), 509-518.
44. A. Mafi, T. J. Puthenpurakal, R. B.T. Reddy and H. Saremi, Relative Hilbert co-efficients, *Glasgow math. J.*, 59 (2017), 729-741.

45. A. Mafi, Ratliff-Rush ideal and reduction numbers, *Comm. Algebra.*, 46 (2018), 1272-1276.
46. J. Herzog and A. Mafi, Stability properties of powers of ideals over regular local rings of small dimension, *Pacific J. Math.*, 295 (2018), 31-42.
47. Sh. Arkian and A. Mafi, On the h-vectors of the powers of graded ideals, *Bull. Math. Soc. Sci. Math. Roumanie.*, 109 (2018), 263-271.
48. A. Mafi, On the computation of the Ratliff-Rush closure, associated graded ring and invariance of a length, *J. Comm. Algebra.*, 10 (2018), 547-557.
49. F. Cheraghi and A. Mafi, Reduction of ideals relative to an Artinian module and the dual of Bruch's inequality, *Algebra Colloq.*, 26 (2019), 113-122.
50. A. Mafi and S. Tabejamaat, Almost Cohen-Macaulayness of Koszul homology, *Bull. Korean Math. Soc.*, 56 (2019), 471-477.
51. Sh. Karimi and A. Mafi, On stability properties over powers of polymatroidal ideals, *Collect. Math.*, 70 (2019), 357-365.
52. A. Mafi and D. Naderi, Results on the Hilbert coefficients and reduction numbers, *Proc. Indian. Acad. Sci. Math. Sci.*, 129 (2019), 1-12.
53. H. Saremi and A. Mafi, On the degree of Hilbert polynomials of derived functors, *Mathematical Notes.*, 106 (2019), 423-428.
54. F. Cheraghi and A. Mafi, On the dual of Hilbert coefficients and width of the Associated graded modules over Artinian modules, *Filomat.*, 33 (2019), 3277–3290.
55. M. Jafari, A. Mafi and H. Saremi, Sequentially Cohen-Macaulay matroidal ideals, *Filomat*, 34 (2020), 4233-4244.
56. A. Mafi and D. Naderi, On the first generalized Hilbert coefficient and depth of associated graded rings, *Bull. Korean Math. Soc.*, 57 (2020), 407-417.
57. H. Saremi and A. Mafi, Unmixedness and arithmetic properties of matroidal ideals, *Arch. Math. (Basel).*, 114 (2020), 299–304.
58. A. Mafi and D. Naderi, A note on linear resolution and polymatroidal ideals, *Proc. Indian Acad. Sci. (Math. Sci.)*, 131 (2021), 1-15.
59. A. Mafi and D. Naderi, On the Hilbert coefficients, depth of associated graded rings and reduction numbers, *J. Comm. Algebra*, 13 (2021), 103–115.
60. A. Mafi, D. Naderi and M. Tohidi, On the dual of Burch's inequality and width of certain graded Artinian modules, *Math. Reports.*, 24(2022), 343-352.
61. A. Mafi and D. Naderi, A note on stability properties of powers of polymatroidal ideals, *Bull. Iranian Math. Soc.*, 48(2022), 3937-3945.
62. A. Mafi, D. Naderi and P. Soufivand, On vertex decomposability and regularity of graphs, *Inter. Elec. J. Algebra.*, 33(2023), 205-2012.
63. A. Mafi and H. Saremi, Strong persistence and associated prime of powers of monomial ideals, *Comm.Algebra.*, 51(2023), 859-863.
64. H. N. Aziz, A. Mafi and F. Seyfpour, Bi-sequentially Cohen-Macaulay bipartite graphs, *J. Alg. Appl.*, 22(2023), 2350110.
65. P. M. Hamaali, A. Mafi and H. Saremi A characterization of sequentially Cohen-Macaulay matroidal ideals, *Algebra Colloq.*, 30(2023), 237-244.
66. A. Mafi and D. Naderi, A note on almost Cohen-Macaulay monomial ideals, *Bull. Math. Soc. Sci. Math. Roumanie*, 114(2023), 31-39.

67. J. Herzog, Sh. Karimi and A. Mafi, The saturation number of powers of graded ideals, [arXiv:1907.03154](#).
68. A. Mafi, D. Naderi, Almost Cohen-Macaulay bipartite graphs and connected in codimension two, *J. Alg. Appl.*, 24(2025), 2550186.
69. M. Koolani and A. Mafi and H. Saremi, Unmixed polymatroidal ideals, *Arch. Math.*, 124 (2025), no. 6, 625–635.
70. A. Mafi and D. Naderi, A note on Veronese type Freiman ideal, *Comm. Algebra.*, 53 (2025), 4227–4240.
71. M. Koolani and A. Mafi, A remark on sequentially Cohen-Macaulay monomial ideals, *Transactions on Combinatorics*, 14(2025), 89-96.
72. A. Mafi and D. Naderi, Integral closure and Hilbert series of a special monomial ideals, [arXiv: 2112.02921](#).
73. A. Mafi, D. Naderi and H. Saremi, Vertex decomposability and weakly polymatroidal ideals, To appear in *J. Alg. System*.
74. G. Floystad, [Ine Gabrielsen](#), A. Mafi, Polarizations of artin monomial ideals define triangulated balls, [arXiv:2212.09528](#).
75. M. Koolani, A. Mafi and P. Soufivand, An upper bound on stability of powers of matroidal ideals, [arXiv:2308.14019](#).
76. [Ch. Ahmed](#), A. Mafi and M. R. Namiq, Quasi-forest simplicial complexes and almost Cohen-Macaulay, [arXiv:2206.03704](#).
77. [Ch. Ahmed](#), A. Mafi and M. R. Namiq, On the Eliahou and Villarreal conjecture about the projective dimension of co-chordal graphs, [arXiv:2205.07059](#).
78. [J. Alvarez Montaner](#), M. L. Aparicio Garcia and A. Mafi, Morse resolutions of monomial ideals and Betti splittings, [arXiv:2502.02122](#).

Conferences

1. A. Mafi, Hopfian and Co-Hopfian modules in commutative Noetherian modules, Algebra seminar, Al-Zahra University, Tehran, Iran, 2002.
2. A. Mafi, Associated primes of local cohomology modules, First seminar in commutative algebra and related topics, School of mathematics, IPM, Tehran, Iran, 2003.
3. A. Mafi, Some results of the local cohomology modules, Second seminar in commutative algebra and related topics, School of mathematics, IPM, Tehran, Iran, 2004.
4. A. Mafi, Finiteness results of local cohomology modules, Third seminar in commutative algebra and related topics, School of mathematics, IPM, Tehran, Iran, Jan 2007.
5. A. Mafi, Asymptotic prime ideals and results of the generalized local cohomology, Fourth seminar in commutative algebra and related topics, School of mathematics, IPM, Tehran, Iran, Dec 2007.
6. A. Mafi, Gorenstein flat dimension, Cohen-Macaulay and Local cohomology modules, Representation Theory of Algebras, IPM, Tehran, 2008.

7. A. Mafi, Finiteness of local cohomology modules, 5th seminar in commutative algebra and related topics, School of mathematics, Isfahan University of Technology, Isfahan, 2008.
8. H. Saremi and A. Mafi, Some results of sequentially Cohen-Macaulay modules, The first Iraqi-Franch Mathematics conference in cooperation with college of science, Salahaddin University(Erbil), 14-18 November 2009.
9. A. Mafi and H. Saremi, Co-Cohen-Macaulay modules and local cohomology, Summer School on Commutative Algebra and Applications to Combinatorics and Algebraic Geometry” 12 – 25 September 2010, in İstanbul Turkey.
10. A. Mafi, Results of formal local cohomology modules, 21st Algebra Seminar of Iran, University of Tabriz, 10-11 November 2010.
11. H. Saremi and A. Mafi, On the finiteness dimension of local cohomology modules, 7th seminar in commutative algebra and related topics, School of mathematics, IPM, Tehran, Iran, 2010.
12. H. Saremi and A. Mafi, On the Annihilation of local homology modules, The fourth International Conference on Mathematical Sciences, ICM2012, Al-Ain, United Arab Emirates, March 11-14, 2012.
13. H. Saremi and A. Mafi, Finiteness dimension and Bass numbers of generalized local cohomology modules, The 43rd Annual Iranian Mathematics Conference, University of Tabriz 27-30 August 2012, Tabriz, Iran.
14. H. Saremi and A. Mafi, Artinianness of composed local cohomology Modules, International Congress of Mathematicians August 13-21, 2014 | COEX , Seoul, Korea.
15. A. Mafi, Stability properties of powers of ideals, , International Congress of Mathematicians August 1-9, 2018 | Rio de Janeiro, Brazil.
16. A. Mafi, Results on linear resolution and polymatroidal ideals, 15th Seminar in commutative algebra and related topics, School of mathematics, IPM, Tehran, Iran, 2019.
17. A. Mafi, Properties of polymatroidal ideals, 28th Iranian Algebra Seminar, Meragheh, 2024.
18. A. Mafi, Polymatroidal Ideals, Combinatorial Commutative Algebra in Canada, 2025.

Reviewers

- Reviewer for Mathematical Reviews: 2006- Present
- Reviewer of Zentralblatt Math (European Math. Soc.), 2014-present.
- Referee for some Journals

Awards & funding

- 2015 Awarded IMU-Simons Travel Fellowship Recipients
- 2022 Awarded IMU-Simons Travel Fellowship Recipients
- The laureates of the program CIMPA-ICTP Research in Pairs for 2024

PERSONAL SKILLS

Mother tongue(s)

Kurdish(native),
Persian (Second Language),

Other language(s)

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	

C2	C2	C1	C1	C2
Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user				

Organisational / managerial skills

- Good **Leadership** and **Organizational Skills**.
- Good **Project Management**, **Team Leading** and **Scientific Writing skills**.

Computer skills

Tools:

- Word
CoCoA
- LaTeX
Macaulay2

REFERENCES

- **Winfried Bruns**, Professor, Osnabruck University, Osnabruck, Germany. Email: wbruns@uos.de.
- **Maria Evelina Rossi**, Professor, University of Genova, Italy, Email: rossim@dima.unige.it.
- **Gunnar Floystad**, Professor, University of Bergen, Norway, Email: gunnar.floystad@uib.no.
- **Josep Alvarez Montaner**, Professor, Universitat Politècnica de Catalunya, Spain, Email: Josep.Alvarez@upc.edu.
- **Hero Saremi**, Associated Professor, Islamic Azad University, Sanandaj Branch, Iran, Email: hsaremi@iau.ac.ir.