

# Sultan Eylem Toksoy

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## Education

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September 2004- September 2008	<b>Ege University</b> <i>PhD in Mathematics</i> <i>Advisor: Prof. Dr. Refail Alizade</i> <i>Thesis: Supplements in Lattices</i>
July 31-September 3, 2005	<b>University of Perugia</b> <i>Scuola Matematica Interuniversitaria Summer Courses in Mathematics</i> <i>Courses: Lie Algebra, Algebraic Geometry</i>
January 2001- June 2004	<b>Izmir Institute of Technology</b> <i>MSc in Mathematics</i> <i>Advisor: Prof. Dr. Refail Alizade</i> <i>Thesis: Absolutely Supplement and Absolutely Complement Modules</i>
September 1996- June 2000	<b>Ege University</b> <i>BS in Mathematics</i>

## Work Experience

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February 27, 2017 - Ongoing	<b>Associate Professor</b> <i>Hacettepe University Department of Mathematics</i>
June 19, 2018 - October 21, 2018	<b>Visiting Researcher</b> <i>Ohio University Department of Mathematics</i>
May 4, 2016 - February 27, 2017	<b>Assistant Professor</b> <i>Hacettepe University Department of Mathematics</i>
September 22, 2014 - May 4, 2016	<b>Instructor (Part-time)</b> <i>Çankaya University Department of Mathematics</i>
January 1, 2011 - January 1, 2012	<b>Postdoctoral Researcher</b> <i>Hacettepe University Department of Mathematics</i>
December 22, 2000 - September 15, 2014	<b>Teaching Assistant</b> <i>Izmir Institute of Technology Department of Mathematics</i>

## Publications

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- 2022 | 1. Alizade, R. & Toksoy, S. E. Pure-direct-projective modules. *Journal of Algebra and its Applications*, accepted (2022).
2. Toksoy, S. E. Cofinitely (Weak)  $G$ -Supplemented Lattices. *Duzce University Journal of Science and Technology*, 10 (1), 476-482, DOI: 10.29130/dubited.997518 (2022).
- 2021 | 3. Maurya, S. & Toksoy, S. E. Copure direct injective modules. *Journal of Algebra and its Applications*, 21 (9), 2250187, DOI: 10.1142/S0219498822501870 (2021).
4. Toksoy, S. E. Purely Rickart and Dual Purely Rickart Objects in Grothendieck Categories. *Mediterranean Journal of Mathematics*, 18 (5), DOI: 10.1007/s00009-021-01859-6 (2021).
- 2019 | 5. Toksoy, S. E. Modules with minimal copure-injectivity domain. *Journal of Algebra and its Applications*, 18 (11), 1950201 (14 pages), DOI: 10.1142/S0219498819502013 (2019).
- 2014 | 6. Keskin Tütüncü D. Smith, P. F. & Toksoy, S. E. On dual Baer modules. *Contemporary Mathematics*, Volume 609, 173-184, <http://dx.doi.org/10.1090/conm/609/12081>. (2014).
- 2013 | 7. Keskin Tütüncü, D. & Toksoy, S. E. Absolute Co-supplement and Absolute Co-coclosed Modules. *Hacet. J. Math. Stat.*, 42 (1), 67-79 (2013).
- 2012 | 8. Keskin Tütüncü D. Toksoy, S. E. & Tribak, R. A Note on Endomorphism Rings of Semi-projective Modules. *Math. Proc. R. Ir. Acad.* 112 (2), 93-99, DOI: 10.3318/PRIA.2011.112.09 (2012).
9. Keskin Tütüncü D. Toksoy, S. E. & Tribak, R. Noetherian and Artinian Lattices. *Int. J. Math. Math. Sci., Art. ID 157169*, DOI: 10.1155/2012/157169 (2012).
- 2011 | 10. Alizade, R. & Toksoy, S. E. Cofinitely Supplemented Modular Lattices. *Arab. J. Sci. Eng.*, 36 (6), 919-923 (2011).
- 2009 | 11. Alizade, R. & Toksoy, S. E. Cofinitely Weak Supplemented Lattices. *Indian J. Pure Appl. Math.*, 40 (5), 337-346 (2009).

## Invited Talks

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- "Galois-type Connections Arising Naturally", Workshop on Rings and Modules, Çukurova University, Adana, Türkiye, April 14-15, 2022.
- "On some generalizations from Module Categories to Grothendieck Categories by using Purity", Yeditepe University, Department of Mathematics, Colloquium talk, March 28, 2022.
- "On Copure-injectively Poor Modules", Joint Mathematics Meetings, Denver, Colorado, ABD, January 15-18, 2020.
- "Turbo pairs", Workshop on Algebra, Manisa Celal Bayar University, Department of Mathematics, Manisa, Türkiye, September 16-17, 2019.
- "Galois-type Connections arising naturally", Çankaya University, Department of Mathematics, Colloquium talk, January 19, 2019.
- "Galois-type Connections arising naturally", Ohio University, Department of Mathematics, Colloquium talk, Athens, Ohio, USA, October 17, 2018.
- "On certain Galois-type Connections", Western Kentucky University, Department of Mathematics, Colloquium talk, Bowling Green, Kentucky, USA, October 5, 2018.
- "Copure-injectively Poor Modules", Ohio State University, Department of Mathematics, the OSU-OU Ring Theory Seminar, Columbus, Ohio, USA, August 31, 2018.
- "Quiver representations", Workshop on Algebra, Afyon Kocatepe University, Department of Mathematics, Afyon, Türkiye, January 29-February 02, 2018.
- "Absolute Co-supplement and Absolute Co-coclosed Modules", Recent Trends in Rings and Algebras (RTRA 2013), Murcia, Spain, June 3-7, 2013.
- "On Dual Baer Modules", The 31st Ohio State-Denison Mathematics Conference, Columbus, Ohio, ABD, May 25-27,

2012.

12. "Supplements in Modular Lattices", TOBB University of Economics and Technology, Department of Mathematics, Colloquium talk, Ankara, Türkiye, January 25, 2012.
13. "Absolute Co-supplement and Absolute Co-coclosed Modules", Hacettepe University, Department of Mathematics, Colloquium talk, Ankara, Türkiye, November 16, 2011.
14. "On Cofinitely Supplemented Lattices", Antalya Algebra Days XII, Antalya, Türkiye, May 19-22, 2010.
15. "Extensions of Weakly Supplemented Lattices", Antalya Algebra Days X, Antalya, Türkiye, May 28 – June 1, 2008.
16. "Weak Supplements in Lattices", Antalya Algebra Days IX, Antalya, Türkiye, May 22-27, 2007.
17. "Cofinitely Weak Supplemented Lattices", International Conference on Modules and Comodules, Dedicated to Robert Wisbauer, Porto, Portugal, September 8-10, 2006.
18. "Amplly Cofinitely Supplemented Lattices", Antalya Algebra Days VIII, Antalya, Türkiye, May 17-21, 2006.
19. "Absolutely Supplement Modules", Antalya Algebra Days VII, Antalya, Türkiye, May 18-22, 2005.

## Conferences and Workshops Attended

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1. Workshop on Rings and Modules, April 14-15, 2022, Çukurova University, Department of Mathematics, Adana, Türkiye.
2. 33. National Mathematics Symposium, August 31- September 3, 2021, Online conference.
3. Noncommutative Rings and their Applications VII, July 5-7, 2021, Online conference.
4. Joint Mathematics Meetings (JMM 2020), January 15-18, 2020, Denver, Colorado, ABD.
5. Workshop on Algebra, September 16-17, 2019, Manisa Celal Bayar University, Department of Mathematics, Manisa, Türkiye.
6. Group Theory in Ankara in Honour of Mahmut Kuzucuoğlu's 60th Birthday, May 2-3, 2019, Ankara, Türkiye.
7. 7th Cemal Koç Algebra Days, April 27, 2019, Bilkent University, Department of Mathematics, Ankara, Türkiye.
8. Workshop on Algebra, January 29-February 02, 2018, Afyon Kocatepe University, Department of Mathematics, Afyon, Türkiye.
9. 6th Workshop on Rings, Modules and Algebras, July 03-07, 2017, Dokuz Eylül University, Department of Mathematics, İzmir, Türkiye.
10. 5th Workshop on Rings, Modules and Algebras, May 30-June 03, 2016, Hacettepe University, Department of Mathematics, Ankara, Türkiye.
11. 4th Workshop on Rings, Modules and Algebras, June 01-05, 2015, Hacettepe University, Department of Mathematics, Ankara, Türkiye.
12. 2nd Workshop of Association for Turkish Women in Maths, May 01-03, 2015, Cumhuriyet University, Department of Mathematics, Sivas, Türkiye.
13. 3rd Workshop on Rings, Modules and Algebras, June 23-27, 2014, İzmir Institute of Technology, Department of Mathematics, İzmir, Türkiye.
14. International Conference on Algebra in Honour of Patrick Smith's and John Clark's 70th Birthdays, August 12-15, 2013, Balıkesir, Türkiye.
15. 2nd Workshop on Rings, Modules and Algebras, June 24-28, 2013, İzmir Institute of Technology, Department of Mathematics, İzmir, Türkiye.
16. Recent Trends in Rings and Algebras (RTRA 2013), June 3-7, 2013, Murcia, Spain.
17. 1st Workshop on Ring Theory, June 11-15, 2012, Karabük University, Department of Mathematics, Karabük, Türkiye.
18. The 31st Ohio State-Denison Mathematics Conference, May 25-27, 2012, Columbus, Ohio, ABD.
19. Antalya Algebra Days XIV, May 16-20, 2012, İzmir, Türkiye.
20. VI. Ankara Mathematics Days, June 2-3, 2011, Ankara, Türkiye.
21. Antalya Algebra Days XII, May 19-22, 2010, Antalya, Türkiye.
22. Workshop on Categorical and Homological Methods in Noncommutative Algebra, April 5-17, 2009, Izmir Institute of Technology, Department of Mathematics, İzmir, Türkiye.
23. Antalya Algebra Days X, May 28 – June 1, 2008, Antalya, Türkiye.
24. Antalya Algebra Days IX, May 22-27, 2007, Antalya, Türkiye.
25. International Conference on Modules and Comodules, Dedicated to Robert Wisbauer, September 8-10, 2006, Porto,

Portugal.

26. Antalya Algebra Days VIII, May 17-21, 2006, Antalya, Turkiye.
27. Antalya Algebra Days VII, May 18-22, 2005, Antalya, Turkiye.
28. Summer School on Elliptic Curve Essentials and Cryptography, September 9-11, 2003, İzmir Institute of Technology, Department of Computer Engineering, İzmir, Türkiye.

## **Awards, Grants and Scholarships**

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1. TUBITAK 2219 Postdoc Scholarship, August 1, 2020- August 1, 2021 (postponed because of Covid-19)
2. Hacettepe University Scientific Research Projects Coordination Unit Conference Talk Grant, January 15-18, 2020
3. Western Kentucky University AMS Colloquium Talk Grant, October 4-6, 2018
4. TUBITAK 2224A Grant, June 3-7, 2013
5. TUBITAK 2218 Postdoc Scholarship, January 1, 2011-January 1, 2012
6. TUBITAK 2224B Grant, May 19-22, 2010
7. TUBITAK 2224B Grant, May 28- June 1, 2008
8. TUBITAK 2224B Grant, May 22-27, 2007
9. TUBITAK 2224A Grant, September 8-10, 2006
10. TUBITAK 2224B Grant, May 17-21, 2006
11. University of Perugia Sculoa Matematica Interuniversitaria Summer School Grant, July 31-September 3, 2005
12. TUBITAK 2224B Grant, May 18-22, 2005

## **Projects**

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1. İzmir Institute of Technology Scientific Research Project: Weakly Supplemented Lattices, 2008-2009.  
Mission: Researcher
2. İzmir Institute of Technology Scientific Research Project: Supplements in Lattices, 2007-2008.  
Mission: Researcher
3. İzmir Institute of Technology Scientific Research Project: Cofinitely Supplemented Lattices, 2006-2007.  
Mission: Researcher
4. İzmir Institute of Technology Scientific Research Project: Totally Weak Supplemented Modules, 2005-2006.  
Mission: Researcher,
5. İzmir Institute of Technology Scientific Research Project: Supplemented Modules, 2004-2005.  
Mission: Researcher,

## **Student Supervision**

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### **Master Students**

1. Aliye Yiğit, "Pure-direct-injective Objects in Grothendieck Categories", 2021-2022.
2. Batuhan Aydoğdu, "Pure-direct-projective Objects in Grothendieck Categories", 2021-2022.
3. Elif Can (current)

### **PhD Students**

1. Aliye Yiğit (current)

## Teaching Experience

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	2022-2023 Fall	Linear Algebra
	2021-2022 Spring	Fundamentals of Linear Algebra
	2021-2021 Fall	Commutative Rings I Linear Algebra
	2020-2021 Spring	Commutative Rings I Fundamentals of Linear Algebra
	2020-2021 Fall	Commutative Rings I Linear Algebra
	2019-2020 Spring	Introduction to Linear Algebra Fundamentals of Linear Algebra Abstract Algebra II Commutative Rings I
	2019-2020 Fall	Calculus I
	2018-2019 Summer	Mathematics for Engineers
	2018-2019 Spring	Calculus I Differential Equations
	2018-2019 Fall	
<b>Undergraduate Courses</b>	2017-2018 Spring	Calculus I
	2017-2018 Fall	Calculus I Abstract Algebra I Commutative Algebra I
	2016-2017 Spring	Calculus II Fundamentals of Linear Algebra
	2016-2017 Fall	Elementary Number Theory Calculus I Basic Mathematics
	2015-2016 Spring	Calculus I Mathematics for Business and Economy II
	2015-2016 Fall	Linear Algebra Calculus I Mathematics for City Planners Geometry for Architects
	2014-2015 Spring	Basic Linear Algebra Introduction to Differential Equations Elementary Number Theory
	2014-2015 Fall	Basic Linear Algebra Mathematics for Architects

**Graduate Courses**

2022-2023 Fall	Homological Algebra I Introduction to Representation Theory of Algebras I Special Studies
2021-2022 Spring	Algebra II Introduction to Category Theory Special Studies
2021-2022 Fall	Special Studies
2020-2021 Spring	Introduction to Category Theory Group Theory
2020-2021 Fall	Homological Algebra I
2019-2020 Spring	Introduction to Commutative Algebra
2016-2017 Spring	Introduction to Homological Algebra
2014-2015 Spring	Algebra

## Article Review for American Mathematical Society MathSciNet

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- MR4385149 | Emmenegger, Jacopo; Pasquali, Fabio; Rosolini, Giuseppe: A characterisation of elementary fibrations. *Ann. Pure Appl. Logic* 173 (2022), no. 6, Paper No. 103103, 29 pp. 03G30 (18C40 18C50 18D30 18D40 18N45)
- MR4358620 | Fu, X. H.; Herzog, I.; Hu, J. S.; Zhu, H. Y.: Lattice theoretic properties of approximating ideals. *J. Pure Appl. Algebra* 226 (2022), no. 7, Paper No. 106986, 17 pp. 18E10 (18G15)
- MR4064108 | Balmer, Paul; Krause, Henning; Stevenson, Greg: The frame of smashing tensor-ideals. *Math. Proc. Cambridge Philos. Soc.* 168 (2020), no. 2, 323–343. 18M99 (16D90)
- MR4130743 | di Micco, Davide; Van der Linden, Tim: An intrinsic approach to the non-abelian tensor product via internal crossed squares. *Theory Appl. Categ.* 35 (2020), Paper No. 34, 1268–1311. 18D40 (18E13 20J15)
- MR4114976 | Chiaselotti, G.; Infusino, F.: Some classes of abstract simplicial complexes motivated by module theory. *J. Pure Appl. Algebra* 225 (2021), no. 1, Paper No. 106471, 45 pp. 06A15 (08A02 16D10)
- MR4074586 | Wasserman, Thomas A.: The symmetric tensor product on the Drinfeld centre of a symmetric fusion category. *J. Pure Appl. Algebra* 224 (2020), no. 8, 106348, 35 pp. 18N10
- MR4054774 | Estrada, Sergio; Pérez, Marco A.; Zhu, Haiyan: Balanced pairs, cotorsion triplets and quiver representations. *Proc. Edinb. Math. Soc.* (2) 63 (2020), no. 1, 67–90. 18G25 (16G20 18C15)
- MR4025231 | Taşdemir, Özgür; Karabacak, Fatih: Generalized SIP-modules. *Hacet. J. Math. Stat.* 48 (2019), no. 4, 1137–1145. 16D10 (16D50)
- MR3852378 | Albu, Toma: The conditions  $C_i$ ,  $i = 1, 2, 3, 11, 12$ , in rings, modules, categories, and lattices. *Advances in rings and modules*, 17–34, *Contemp. Math.*, 715, Amer. Math. Soc., [Providence], RI, [2018], ©2018. 06C05 (06B35 06C99 16D80 16S90 18E15)
- MR3795389 | Bárcenas, Mauricio Medina; Montes, José Ríos; Corichi, Angel Zaldívar: Some operators and dimensions in modular meet-continuous lattices. *J. Algebra Appl.* 17 (2018), no. 5, 1850094, 22 pp. 06C05 (16D10)
- MR3741073 | Alvarado-García, Alejandro; Cejudo-Castilla, César; Rincón-Mejía, Hugo Alberto; Vilchis-Montalvo, Ivan Fernando: Pseudocomplements and strong pseudocomplements in lattices of module classes. *J. Algebra Appl.* 17 (2018), no. 1, 1850016, 14 pp. 16D50 (16D80)
- MR3475912 | Beyranvand, R.; Moradi, F.: Small submodules with respect to an arbitrary submodule. *J. Algebra Relat. Topics* 3 (2015), no. 2, 43–51. 16D10
- MR3371460 | Rincón-Mejía, Hugo Alberto; Sánchez-Hernández, José Patricio: On uniformity in lattices of classes of modules defined by closure properties. *Int. Electron. J. Algebra* 18 (2015), 92–106. 16D10 (06D15)
- MR3234511 | Ungor, Burcu; Halicioglu, Sait; Harmanci, Abdullah: On a class of  $\delta$ -supplemented modules. *Bull. Malays. Math. Sci. Soc.* (2) 37 (2014), no. 3, 703–717. 16D80
- MR3125012 | Türkmen, B. N.; Pancar, A.: Generalizations of  $\oplus$ -supplemented modules. *Ukrainian Math. J.* 65 (2013), no. 4, 612–622. 16D80
- MR3117110 | Han, Song-Chol; Ri, Hak-Rim: The only regular inclines are distributive lattices. *Rom. J. Math. Comput. Sci.* 3 (2013), no. 2, 160–163. 16Y60
- MR3055571 | Rincón-Mejía, Hugo A.; Zorrilla-Noriega, Manuel G.: On some relations between the lattices  $R\text{-nat}$ ,  $R\text{-conat}$  and  $R\text{-tors}$  and the rings they characterize. *J. Algebra Appl.* 12 (2013), no. 5, 1250214, 13 pp. 16D90 (06C99)

## **Professional Services**

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- Referee for Algebra Colloquium, Cumhuriyet Science Journal, Khayyum Journal of Mathematics, Palestine Journal of Mathematics.
- Panelist for TUBITAK.
- External advisor for TUBITAK.
- Reviewer for American Mathematical Society Mathematical Reviews

## **Professional Membership**

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- American Mathematical Society (AMS, [ams.org](http://ams.org))
- Association for Turkish Women in Mathematics (TKMD, [tkmd.org](http://tkmd.org))