

Ahmet Batal, Associate Professor

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Education

Ph.D. in Mathematics	2009-2013
<i>Sabancı University, İstanbul, Türkiye</i>	
M.S. in Mathematics	2004-2008
<i>Koç University, İstanbul, Türkiye</i>	
B.A. in Physics	1999-2004
<i>Koç University, İstanbul, Türkiye</i>	

Academic Appointments

Associate Professor	2024 – Present
<i>İzmir Institute of Technology, İzmir, Türkiye</i>	<i>Department of Mathematics</i>
Asistant Professor	2015 – 2024
<i>İzmir Institute of Technology, İzmir, Türkiye</i>	<i>Department of Mathematics</i>

Publications

- Batal, A. (in press). Bounding the multiplicities of eigenvalues of graph matrices in terms of circuit rank. *Hacettepe Journal of Mathematics and Statistics*.
- Batal, A. (2026). On the construction of xor-magic graphs. *Discrete Applied Mathematics*, 379, 288-315.
- Batal, A. (2024). Effects of edge addition or removal on the nullity of a graph. *Discrete Applied Mathematics*, 357, 56-65.
- Batal, A., Gügümçü, N. (2023). k-color region select game. *Journal of the Mathematical Society of Japan*, 75(4), 1409-1429.
- Batal, A., Göral, H., Eyidoğan, S. (2023). Irreducibility and Primality in Differentiability Classes. *Real Analysis Exchange*, 48(1), 119-138.
- Batal, A. (2022). Parity of an odd dominating set. *Communications Faculty of Sciences University of Ankara Series A1 Mathematics and Statistics*, 71(4), 1023-1028.
- Batal, A., Özsarı, T., Yılmaz, K. C. (2021). Stabilization of higher order Schrödinger equations on a finite interval: Part I. *Evolution Equations and Control Theory*, 10(4), 861-919.
- Batal, A., Fokas, A. S., Özsarı, T. (2020). Fokas method for linear boundary value problems involving mixed spatial derivatives. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 476, 20200076.

- Özsarı, T., Batal, A. (2019). Pseudo-Backstepping and Its Application to the Control of Korteweg–de Vries Equation from the Right Endpoint on a Finite Domain. *SIAM Journal on Control and Optimization*, 57(2), 1255-1283.
- Batal, A. Özsarı, T. (2019). Output feedback stabilization of the linearized Korteweg-de Vries equation with right endpoint controllers. *Automatica*, 109, 108531.
- Batal, A., Özsarı, T. (2016). Nonlinear Schrödinger equation on the half-line with non-linear boundary condition. *Electronic Journal of Differential Equations*, 222, 1-20.
- Batal, A. (2013). Characterization of potential smoothness and the Riesz basis property of the Hill–Schrödinger operator in terms of periodic, antiperiodic and Neumann spectra. *Journal of Mathematical Analysis and Applications*, 405(2), 453-465.
- Mostafazadeh, A., Batal, A. (2004). Physical aspects of pseudo-Hermitian and PT-symmetric quantum mechanics. *Journal of Physics A: Mathematical and General*, 37(48), 11645.

Supervised Theses

M.Sc. Theses

- **ÖZDEMİR, Derya.** (2022). *Qualitative properties of solutions of some Keller-Segel type systems.* M.Sc. Thesis, İzmir Institute of Technology (IZTECH), Graduate School of Engineering and Science, Department of Mathematics. (Completed)
- **YAZAN, Tuğba.** (2020). *Semigroup theory and some applications.* M.Sc. Thesis, İzmir Institute of Technology (IZTECH), Graduate School of Engineering and Science, Department of Mathematics. (Completed)

Ph.D. Theses

- **YILMAZ, Kemal Cem.** (2022). *Boundary feedback stabilization of some evolutionary partial differential equations.* M.Sc. Thesis, İzmir Institute of Technology (IZTECH), Graduate School of Engineering and Science, Department of Mathematics. (Completed)

Teaching Experience

Calculus, Fundamentals of Mathematics, Linear Algebra, Abstract Algebra, Discrete Mathematics, Graph Theory, Ordinary Differential Equations, Partial Differential Equations, Real Analysis, Complex Analysis, Functional Analysis, Measure Theory, Generalized Functions, Bounded Operator Theory.