

Definition

P.hD-Department of Mathematics

Taylan Demir¹

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Taylan Demir is a doctoral researcher in the Department of Mathematics at Ankara University, specializing in applied mathematics, fractional calculus, and mathematical modeling. He completed his BSc in Mathematics at Atılım University under the supervision of Prof. Dr. Abdullah Özbekler, with a thesis titled “Hartman and Lyapunov Inequalities for Second-Order Differential Equations”, focusing on stability theory and second-order ODEs. He received his MSc from Çankaya University under the co-supervision of Prof. Dr. Dumitru Baleanu and Prof. Dr. Fahd Jarad, with a thesis entitled “q-Fractional Proportional Derivatives and q-Laplace Transforms.” His research interests include fractional differential equations, q-calculus, fractional Laplace transforms, control theory, viscoelasticity, seismic wave modeling, delay differential systems, and epidemiological frameworks (SEIR, SEIS, SEIRV). He actively works with fractional operators such as Caputo, ψ -Caputo, Atangana–Baleanu, and Grünwald–Letnikov, and develops numerical solutions using the Adams–Bashforth–Moulton scheme, Runge–Kutta methods, discrete Laplace and Z-transforms, and fractional difference operators. Demir’s publications have appeared in peer-reviewed journals indexed by Web of Science, Scopus, MathSciNet, and Google Scholar. He has presented his research at prominent academic conferences such as CMES 2025 (Dicle University), MCWA 2025 (Marmara University), ICMAD 2025 (Konya Technical University), the 5th Topology Workshop, and the 16th Ankara Mathematics Days. As a scientific reviewer, he actively contributes to journals including Algorithm, Economies, Symmetry, Journal of Risk and Financial Management (MDPI), Integral Transforms and Special Functions (Taylor & Francis), and the Journal of Advances in Mathematics and Computer Science. His reviewing roles highlight his engagement with academic publishing and peer evaluation. He is currently ranked in global academic databases such as AD Scientific Index, ScholarGPS, and ResearcherID, the latter founded by Thomson Reuters. His h-index, citation count, and publication activity reflect a growing international recognition in interdisciplinary research. Taylan Demir maintains strong collaborations with world-renowned scholars, including Prof. Dr. Dumitru Baleanu, Prof. Dr. Fahd Jarad, Prof. Dr. Zakia Hammouch, Prof. Dr. Ali Akgül, and Prof. Dr.

Shkelqim Hajrulla, co-authoring numerous international papers in the areas of fractional dynamics, epidemiology, control theory, and applied mathematical physics. His academic mission is rooted in the union of rigorous theoretical analysis with real-world applications, aiming to produce high-impact results in fractional modeling, dynamical systems, and interdisciplinary science.

Declarations

Potential competing interests: No potential competing interests to declare.