

**İTÜ**



**MATEMATİK  
BÖLÜMÜ**

## **Multiplicativity of Reidemister-Franz Torsion for Even Manifolds**

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In this work we study Reidemeister-Franz torsion for non-acyclic cellular chain complexes arising from closed, oriented, highly connected even dimensional manifolds. The monoid of such manifolds under connected sum admits a unique factorisation into indecomposable elements. Using this factorisation, we prove that the Reidemeister-Franz torsion of an even-dimensional manifold decomposes multiplicatively as the product of the torsions of its prime factors without any corrective term.

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***About the speaker:***

Esmâ Dirican Erdal received her B.Sc. and M.Sc. degrees in Mathematics from Hacettepe University, and completed her PhD in Mathematics at Izmir Institute of Technology. Following her doctoral studies, she conducted postdoctoral research at Istanbul Technical University.

During her academic career, she served as a research assistant at Izmir Institute of Technology and later as a lecturer at Yeditepe University. She is a faculty member in the Department of Mathematics at Işık University , where she has been working since 2023.

Her research interests lie in algebraic topology, geometry and homological algebra.