Boğaziçi
MATH GRAD SEMINAR

3-MANIFOLDS WITH PRESCRIBED $\mathbb{Z}_2$-COHOMOLOGY RINGS

Kerem Kubilay
Boğaziçi University

Abstract: The question of whether a graded $\mathbb{Z}_2$-algebra can be realized as a $\mathbb{Z}_2$-cohomology ring of a closed 3-manifold was settled by M. M. Postnikov in 1948. Recently in 2024 J. A. Hillman provided a new argument, giving explicit surgery descriptions for 3-manifolds that realize the given ring. We will present Hillman's construction and provide illustrations. Calculations will rely heavily on pictures.

Date : Friday, December 12th , 2025
Time: 12:30   Note the unusual date and time
Place: Online