



# APPLIED MATHEMATICS SEMINAR

## Can we spot modified gravity black holes?

By

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**Abstract:** In this talk, we discuss modified gravity theories via the weak gravitational lensing and shadow of their black hole solutions. For this purpose, we first determine their weak deflection angle using the Gauss-Bonnet theorem in the vacuum and plasma. Next, we compute their shadow. Finally, we test modified gravity theories using the shadows of M87\* and Sagittarius A\* black holes as observed by the Event Horizon Telescope in the extreme-field regime. We close the talk by giving future prospects on black hole observations.

**Date:** Monday, April 03, 2023

**Time:** 17:00-18:00, GMT+3

**Place:** ZOOM

To request the event link, please send a message to [yheydarzade@bilkent.edu.tr](mailto:yheydarzade@bilkent.edu.tr).