



# Department of Mathematics Panjab University, Chandigarh



cordially invites you to a talk as per the following details

**Speaker: Dr. Anisa Chorwadwala (IISER Pune)**

**Title: Optimisation of a Mixed Steklov-Dirichlet Eigenvalue**

**DATE: December 15, 2023 (Friday)**

**TIME: 1:00 -2:00 pm**

**VENUE: Seminar Hall, Department of Mathematics**

**ABSTRACT:** In this talk, I am going to talk about an eigenvalue optimisation problem over a family of doubly connected domains  $U := D \setminus \overline{\Omega}$  in  $\mathbb{R}^2$  where one boundary component,  $\partial D$ , is circular while the other component  $\partial \Omega$  enjoys a Dihedral symmetry. The Boundary Value Problem under consideration is  $\Delta u = 0$  on  $D \setminus \overline{\Omega}$ ,  $u = 0$  on  $\partial D$  and  $\frac{\partial u}{\partial n} = \sigma u$  on  $\partial \Omega$ . We will study the behaviour of the first nonzero eigenvalue of this problem as the domain  $\Omega$  rotates about its center by angle  $\theta$  in the anticlockwise direction. We will see if there is any symmetry, monotonicity in the behaviour of the eigenvalue as a function of  $\theta$ . This is based on a joint work with Sagar Basak, Ravi Prakash and Sheela Verma.

