

26.04.2021

**Monday's Nonstandard Seminar 30**

**14:00**

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Title: **Fourth order  $pq$ -Laplacian**

Abstract: In this talk we examine a fourth order non-linear eigenvalue problem associated to optimal norms and approximation numbers of higher order Sobolev embeddings on intervals.

Motivated by study of the higher order Sobolev embeddings on interval and their approximation we introduce and study a non-linear  $pq$ -biharmonic eigenvalue problem on the unit segment subject to Navier boundary condition. We discuss existence of periodic solutions and symmetric solutions, initial conditions which leads to blow-up and quantify speed of growth for non-bounded solutions. In the case  $p, p'$  we show that all eigenvalues and eigenfunctions can be expressed in terms of generalized trigonometric functions. These results were obtained with Lyonell Boulton.