

## **Eigenvalues of the negative $(p, q)$ -Laplacian with different boundary conditions**

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Let  $\emptyset \neq \Omega \subset \mathbb{R}^N$ ,  $N \geq 2$ , be a bounded open set with smooth boundary  $\partial\Omega$ . Consider in  $\Omega$  the so-called negative  $(p, q)$ -Laplacian

$$Au =: -(\Delta_p u + \Delta_q u),$$

with different boundary conditions (Dirichlet, Neumann-like, Robin-like, etc.), where  $p, q \in (1, +\infty)$ . We discuss about the set  $E$  of eigenvalues of  $A$  under the condition  $p \neq q$ . Sometimes a complete description of  $E$  can be provided. So the nonhomogeneous case ( $p \neq q$ ) is more advantageous than the case  $p = q$  when a full description is available only if  $p = q = 2$ . The Steklov eigenvalue problem associated with  $A$  is also addressed.