

# GENERALISED TRIGONOMETRIC FUNCTIONS

DAVID E. EDMUNDS

UNIVERSITY OF SUSSEX, BRIGHTON (UK)

ABSTRACT. A natural generalisation of the sine function occurs as an eigenfunction of the Dirichlet problem for the one-dimensional  $p$ -Laplacian. We shall study the properties of the  $p$ -trigonometric functions and their connection with classical analysis, and give a variety of new identities and inequalities. The basis properties in Lebesgue spaces of the  $p$ - eigenfunctions will be discussed.