Title: Two-matrix weighted BMO spaces in two parameters

Abstract: In this talk we present some recent results on biparameter two-matrix weighted BMO spaces. We develop a complete theory of two-matrix weighted little BMO in two parameters, establishing in particular lower and upper bounds for commutators with Journé operators. Moreover, we lay the foundations of a theory of two-matrix weighted product BMO in two parameters, including an appropriate version of H^1-BMO duality and upper bounds for paraproducts and bicommutators. Our work extends earlier results of I. Holmes, S. Petermichl and B. Wick as well as J. Isralowitz, S. Pott and S. Treil.

The talk is based on joint works with Odí Soler i Gibert (Universitat Politècnica de Catalunya).