

# Q-MATH

## seminar

### QUASI-DIAGONALITY AND FINITE-DIMENSIONAL APPROXIMATIONS

**SPEAKER:** Diego Martínez (UC3M & ICMAT)

**DATE:** Wednesday, February 19, 2020 - 12:00

**VENUE:** UC3M, Seminar Room 2.2D08

**ABSTRACT:** Finite-dimensional approximations of (normally of infinite nature) objects is ubiquitous in mathematics. In this talk we will introduce the so-called quasi-diagonal operators. That is, given an infinite-dimensional Hilbert space  $H$ , we say that an operator on  $H$  is quasi-diagonal if some of its corners behave approximately the same as the operator itself. Although informal so far, this notion has several applications in vastly different areas, such as numeric analysis, group theory or  $K$ -theory. We shall name a few of these, highlighting some key constructions. We will end the talk introducing Berg's technique, and how it can be generalized to residually finite groups.