

THEMATIC SESSION: Operator algebra

The diagonal dimension for C^* -pairs

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We will introduce the notion of diagonal dimension for diagonal pairs of C^* -algebras in the sense of Kumjian, and will compare it with the usual nuclear dimension for C^* -algebras. For instance, the Jiang-Su algebra Z admits a diagonal MASA D such that the diagonal dimension of (Z, D) is equal to n for any given natural number n even though the nuclear dimension of Z is equal to 1. We also show that the diagonal dimension of a uniform Roe algebra with respect to the standard diagonal is equal to the asymptotic dimension of its underlying metric space. Finally, we will discuss its relation to the dynamic asymptotic dimension of groupoids introduced by Guentner, Willett and Yu and the tower dimension of topological dynamical systems introduced by Kerr.

This is joint work with Hung-Chang Liao and Wilhelm Winter.