**Villarroya Alvarez, Paco** (Lunds Universitet):

*Compact T(1) Theory.*

**Abstract:** We prove a $T(1)$-type theorem that characterizes compactness of singular integral operators whose kernels satisfy a standard smoothness condition with decay also along the diagonal.

Following the spirit of David and Journé’s original $T(1)$ Theorem, the characterization is given in terms of the action of the operator over special families of functions. For this reason, we define a new property of ‘weak compactness’ and a proper substitute for the space BMO.

We apply our main theorem to prove compactness of some particular perturbations of the Cauchy Integral.