1127-42-60 **Jose Manuel Conde-Alonso**, **Amalia Culiuc** and **Francesco Di Plinio*** (francesco.diplinio@virginia.edu), Department of Mathematics, University of Virginia, Kerchof Hall, Box 400137, Charlottesville, VA 22904, and **Yumeng Ou**. *A sparse domination principle for rough singular integrals.*

Singular integral operators, which are a priori signed and non-local, can be dominated in norm, pointwise, or dually, by sparse averaging operators, which are in contrast positive and localized. The most striking consequence is that weighted norm inequalities for the singular integral follow from the corresponding, rather immediate estimates for the averaging operators. In this talk, we prove that bilinear forms associated to the rough homogeneous singular integrals

$$T_\Omega f(x) = \text{p.v.} \int_{\mathbb{R}^d} f(x-y)\Omega\left(\tfrac{y}{|y|}\right) \frac{\mathrm{d}y}{|y|^d}$$

where $\Omega \in L^q(S^{d-1})$ has vanishing average and $1 < q \le \infty$, and to Bochner-Riesz means at the critical index in $\mathbb{R}^d$ are dominated by sparse forms involving $(1,p)$ averages. Our domination theorems entail as a corollary new sharp quantitative A_p-weighted estimates, extending previous results of Hytönen-Roncal-Tapiola for T_Ω and answering a conjecture of Perez, Roncal and Rivera-Rios. Our results follow from a new abstract sparse domination principle which does not rely on weak endpoint estimates for maximal truncations. (Received January 17, 2017)