



# Announcing

A Seminar Presentation  
on Thursday

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Kaplan 208

at The University of New Haven

## Muckenhoupt-Wheeden Conjectures for Sparse Operators

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**Abstract:** Muckenhoupt-Wheeden conjectures were long standing conjectures which originally related the weighted boundedness of the Calderón-Zygmund operators and that of the Hardy-Littlewood maximal function. They were completely disproved by Reguera, Scurry, Criado and F. Soria (2011–2013). Because of special relationship between Calderón-Zygmund operators and Sparse operators, we had similar conjectures stated for Sparse operators. A result of Lacey in 2015 implied the existence of a sparse operator not following the conjectures. However, what that operator looks like was still unknown.

In this talk, we will give an answer for the question above. More specifically, we will provide an explicit example of a sparse operator and a pair of weights for which the Hardy-Littlewood maximal function is bounded from  $L^p(v)$  to  $L^p(u)$  and from  $L^{p'}(u^{1-p'})$  to  $L^{p'}(v^{1-p'})$  while the sparse operator is not bounded on the same spaces. Our construction also provides an example of a single weight for which the weak-type endpoint does not hold for sparse operators.

### Further Information

For further information, please contact Angie Domschine at the Department of Mathematics and Physics, Office: Maxcy 204, 203-932-7250, ADomschine@newhaven.edu.